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NAVMC DIRECTIVE 3500.89

Subj: CH-53 TRAINING AND READINESS (T&R) MANUAL

Ref: (a) NAVMC DIR 3500.14

Encl: (1) LOCATOR SHEET

1. PURPOSE. To revise training standards and regulations regarding the training of CH-53 aircrew per the reference.

2. CANCELLATION. MCO P3500.51.

3. INFORMATION

a. The purpose of this revision is to align CH-53 syllabi with T&R Program Manual policy and to fine-tune core model table construction with Deputy Commandant Aviation's vision to report training level readiness via the T&R core model.

b. Recommended changes to this directive are invited, and will be submitted via the syllabus sponsor and the appropriate chain of command to the Commanding General, Training and Education Command, Aviation Training Branch via e-mail (refer to http://www.tecom.usmc.mil/atb/contacts_.htm) or the Defense Message System using the following plain language address: CG TECOM QUANTICO VA ATB.

4. SCOPE. CH-53 squadrons will train to the standards and programs of instruction contained in this Directive.

5. COMMAND. This Directive is applicable to the Marine Corps Total Force.

6. CERTIFICATION. This Directive is reviewed and approved this date.

K. J. STALDER
By direction

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RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporated Change

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CH-53 PILOT

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*** * N O T E * ***

Aircrews shall include Crew Resource Management as part of their brief.

CHAPTER 1

CH-53 PILOT

100. MARINE HEAVY HELICOPTER SQUADRON (CH-53E) UNIT CORE COMPETENCY. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The CH-53 T&R Manual represents the collaborative effort of CH-53 Subject Matter Experts who designed training standards to maximize the full combat capabilities of the CH-53 and its crew. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aircrew maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained aircrews remain ready, relevant, and fully capable of supporting the MAGTF commander.

1. HMH Mission. Support the MAGTF Commander by providing assault support transport of heavy equipment, combat troops, and supplies, day or night under all weather conditions during expeditionary, joint, or combined operations.

2. Mission Essential Task List (METL)

a. (UJTL TA 1.1.2) Conduct Shipboard Deck Helicopter Landing Qualifications.

b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations.

(1) Maintain the capability to deploy and operate from advanced bases, expeditionary airfields, Forward Operating Bases (FOBs), and naval shipping.

(2) Maintain the capability to conduct extended range operations employing aerial refueling.

(3) Perform organizational maintenance on assigned aircraft.

c. (UJTL TA 1.2.1) Conduct Air Assault Operations and Air Assault.

(1) Provide assault support transport of heavy equipment, supplies, and combat troops using internal and/or external means.

(2) Provide support for casualty evacuation operations.

(3) Maintain self-defense capability from ground-to-air and air-to-air threats.

d. (UJTL TA 1.2.3) Conduct Amphibious Assault and Raid Operations.

(1)Conduct assault support for maritime special operations.

e. (UJTL TA 4.2) Distribute Supplies and Provide Transport Service.

(1) Conduct Aerial Re-supply.

(2) Provide support for mobile Forward Arming and Refueling Points (FARPS).

f. (UJTL TA 4.4) Conduct Joint Logistics Over-The-Shore Operations (JLOTS).

g. (UJTL TA 6.2) Conduct Joint Personnel Recovery.

(1) Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

(2) Augment local Search and Rescue (SAR) assets.

h. (UJTL TA 6.4) Conduct Noncombatant Evacuation

(1) Provide support for evacuation operations.

3. Table of Organization. Refer to Table of Organization (T/O) 8960 managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for CH-53E units. As of this publication date, CH-53E units are authorized:

SQUADRON
16 Aircraft
38 Pilots
26 Crew Chiefs
26 Aerial Observers/Aerial Gunners

RESERVE SQUADRON
8 Aircraft
19 Pilots
13 Crew Chiefs
13 Aerial Observers/Aerial Gunners

DETACHMENT
4 Aircraft
8 Pilots
6 Crew Chiefs
6 Aerial Observers/Aerial Gunners

4. Core Capability. A core capable CH-53 unit is able to sustain the number of sorties listed below on a daily basis during contingency/combat operations. The sortie rates are based on 1.8 hour average sortie duration and assumes > 70 percent FMC aircraft and > 90 percent T/O aircrew on hand. If unit FMC aircraft < 70 percent or T/O aircrew < 90 percent, core capability will be degraded by a like percentage. A core capable unit is able to accomplish all tasks designated in the unit METL from a main base, expeditionary base, or amphibious platform.

a. Core Capable Squadron. A core capable CH-53E squadron is able to sustain 27 sorties.

b. Core Capable Reserve Squadron. A core capable Reserve squadron is able to sustain 14 sorties.

c. Core Capable Squadron (-). A core capable squadron (-) is able to sustain 21 sorties.

d. Core Capable Detachment. A core capable detachment is able to sustain 7 sorties.

5. METL/Core Skill Matrix. CH-53E core skills directly support the METL as follows:

CH53E PILOT/EAC													
METL	CORE SKILLS												
	FAM/ INST	INT	FORM	CAL	TERF	EXT	GTR	AR	FCLP	AG	TAC	NS HLL	NS LLL
a. Conduct Shipboard Deck Landing Qualifications	X		X	X					X			X	X
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X		X	X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X		X	X	X	X	X	X	X

CH53E PILOT/EAC									
METL	CORE PLUS SKILLS								
	HIE	INT (TBFDS)	GTR	DM	NBC	CQ	MTG	TG	TAC
a. Conduct Shipboard Deck Landing Qualifications					X	X			
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X	X	X	X	X

6. CH-53E Core Model Minimum Requirements (CMMR). Squadron core competency reflects the minimum level of competency a squadron must achieve to perform its core capability. Squadron core competency is measured in terms of minimum unit Core Skill Proficiency (CSP) and minimum numbers of flight leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered core competent, a unit must possess the following numbers of crews who are proficient in each core skill (unit CSP). In order to be considered proficient in a core skill (individual CSP), a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below. The standard CH-53E crew consists of 2 pilots, a crew chief, and an AO/AG. Crew chief surpluses may be used to satisfy AO requirements. **Position may be filled by either crew chief or AO/AG.

CH-53E CMMR (Unit CSP Requirements) Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO/AGs	Crews
FAM/INST	32	-	-	16
INT	-	12	12	12
FORM	24	12	12	12
CAL	24	12	12	12
TERF	24	12	12	12
EXT	24	12	12	12
GTR	24	12	12	12
AR	12	-	-	6
FCLP	24	12	12	12
AG	16	8**		8
TAC	16	8	8	8
NS HLL	24	12	12	12
NS LLL	16	8	8	8
*HIE	8	4	4	4
*INT	-	4**		4
*GTR	16	8	8	8
*DM	16	8	8	8
*NBC	16	8	8	8
*CQ	18	9	9	9
*MTG	-	6**		6
*TG	-	8**		8
*TAC	16	8	8	8

CH-53E CMMR (Unit CSP Requirements) Squadron (-) (less 4 plane detachment)				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO/AGs	Crews
FAM/INST	24	-	-	12
INT	-	8	8	8
FORM	16	8	8	8
CAL	16	8	8	8
TERF	16	8	8	8
EXT	16	8	8	8
GTR	16	8	8	8
AR	8	-	-	4
FCLP	16	8	8	8
AG	12	6**		6
TAC	12	6	6	6
NS HLL	16	8	8	8
NS LLL	12	6	6	6
*HIE	6	3	3	3
*INT	-	4**		4
*GTR	12	6	6	6
*DM	12	6	6	6
*NBC	12	6	6	6
*CQ	10	5	5	5
*MTG	-	6**		6
*TG	-	6**		6
*TAC	12	6	6	6

CH-53E CMMR (Unit CSP Requirements) Reserve Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO/AGs	Crews
FAM/INST	18	-	-	9
INT	-	6	6	6
FORM	12	6	6	6
CAL	12	6	6	6
TERF	12	6	6	6
EXT	12	6	6	6
GTR	12	6	6	6
AR	6	-	-	3
FCLP	12	6	6	6
AG	8	4**		4
TAC	6	3	3	3
NS HLL	12	6	6	6
NS LLL	6	3	3	3
*HIE	4	2	2	2
*INT	-	2**		2
*GTR	8	4	4	4
*DM	8	4	4	4
*NBC	8	4	4	4
*CQ	8	4	4	4
*MTG	-	4**		4
*TG	-	4**		4
*TAC	6	3	3	3

CH-53E CMMR (Unit CSP Requirements) 4 Plane Detachment				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO/AGs	Crews
FAM/INST	8	-	-	4
INT	-	4	4	4
FORM	8	4	4	4
CAL	8	4	4	4
TERF	8	4	4	4
EXT	8	4	4	4
GTR	8	4	4	4
AR	4	-	-	2
FCLP	8	4	4	4
AG	4	4**		2
TAC	4	2	2	2
NS HLL	8	4	4	4
NS LLL	4	2	2	2
*HIE	4	2	2	2
*INT	-	1**		1
*GTR	8	4	4	4
*DM	8	4	4	4
*NBC	4	2	2	2
*CQ	8	4	4	4
*MTG		4**		4
*TG	-	4**		4
*TAC	4	2	2	2

(1) Events Required to Attain Individual CSP. To initially attain CSP, a pilot must successfully complete all of the T&R events listed in the chart below for that core skill.

CH-53E PILOT ATTAIN CORE SKILL PROFICIENCY (CSP)												
CORE SKILL	FAM/ INST	FORM	CAL	TERF	EXT	GTR	AR	FCLP	TAC	AG	NS HLL	NS LLL
T&R Event Requirements to Attain CSP	S200R 201R S202	210R	220 221R	230 231R	240 241R 242R S340 341R 343R	S250 350R	S260 360 361R 362R	S270 271 272 273R	290 390R	280R 380R	S202 211R 222 223R 224R 232R 233R 243 244R 291R	320 321R 322R 330 331R 342R 391R

CH-53E PILOT ATTAIN CORE PLUS PROFICIENCY						
CORE PLUS SKILL	HIE	GTR	DM	NBC	CQ	TAC
T&R Event Requirements to Attain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	470R 471R 472R	490R 491R 492R 493R

(2) Events Required to Maintain Individual CSP. To maintain CSP, a pilot must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

CH-53E PILOT MAINTAIN CORE SKILL PROFICIENCY (CSP)												
CORE SKILL	FAM/ INST	FORM	CAL	TERF	EXT	GTR	AR	FCLP	TAC	AG	NS HLL	NS LLL
T&R Event Requirements to Maintain CSP	201R	210R	221R	231R	241R 341R 343R	350R	361R 362R	273R	390R	280R 380R	211R 223R 233R 244R 291R	321R 331R 342R 391R

CH-53E PILOT MAINTAIN CORE PLUS PROFICIENCY						
CORE PLUS SKILL	HIE	GTR	DM	NBC	CQ	TAC
T&R Event Requirements to Maintain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	472R	491R 492R 493R

b. Minimum Combat Leader Requirements. As a minimum, in order to be considered Core Competent, a unit must posses the following numbers of aircrew with the listed flight leadership designations.

Squadron	
DESIGNATION	Pilots
HAC	16
SEC LDR	9
DIV LDR	6
FLT LDR	5
AMC	4

Reserve Squadron	
DESIGNATION	Pilots
HAC	12
SEC LDR	8
DIV LDR	6
FLT LDR	4
AMC	2

Squadron (-)	
DESIGNATION	Pilots
HAC	12
SEC LDR	6
DIV LDR	4
FLT LDR	3
AMC	3

Detachment	
DESIGNATION	Pilots
HAC	4
SEC LDR	3
DIV LDR	2
FLT LDR	2
AMC	1

7. Qualifications And Designations Tables. The tables below delineate T&R events required to be completed to attain initial qualifications and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification. Re-designation criteria shall be in accordance with the T&R Program Manual and paragraph 130.4 of this Manual.

Qualification	Initial Event Qualification Requirements
NATOPS	600 and IAW OPNAV 3710.7.
Instrument	601 and IAW OPNAV 3710.7.
TERF	230 and 231(R)
NSQ HLL	S202, 211(R), 222, 223(R), 224, 232, 233(R), 291
NSQ LLL	320, 321(R), 322, 330, 331(R), 391(R)
DM	451(R), 452(R)
AG (CC and AO/AG only)	280(R), 281(R), 380(R), 381(R)
TG (CC and AO/AG only)	481(R), 482(R), 483(R)

Designation	Designation Requirements
HAC	610, 611, 612(R). The PUI shall be complete with all 200 and 300 level events prior to beginning HAC syllabus.
SEC LDR	620, 621, 622
DIV LDR	630, 631
FLT LDR	640
AIR MSN CDR	650
TERFI	570, 571, 572(R)
ARI	520, 521(R)
ANI	600 and IAW OPNAV 3710.7.
NI	600 and IAW OPNAV 3710.7.
INSTI	601 and IAW OPNAV 3710.7.
NSFI	IAW the MAWTS-1 Course Catalog.
NSI	
DMI	
WTI	
AGI	
TGI	
IP	553, 554, 555, 556, 557, 558, 559
FCP	602, IAW CH-53 NATOPS Flight Manual, OPNAV 3710.7, OPNAV 4790, and local SOPs.

8. Instructor Requirements. A squadron should possess the following numbers of aircrew with the listed instructor designations per this Manual and MCO 3500.12C (WTTP).

Squadron			
INSTRUCTOR DESIGNATION	Pilots	Crew Chiefs	AO/AGs
TERFI	8	8	
DMI	4	4	
NSI	6	6	
WTI	3	3	
AGI	NA	6*	
ARI	6	-	
TGI	NA	2*	
*AO/AG designated as AGIs may be used to fulfill this requirement.			

Reserve Squadron			
INSTRUCTOR DESIGNATION	Pilots	Crew Chiefs	AO/AGs
TERFI	4	3	
DMI	2	2	
NSI	3	3	
WTI	2	2	
AGI	-	3*	
TGI	NA	1*	
ARI	3	-	

Squadron (-)			
INSTRUCTOR DESIGNATION	Pilots	Crew Chiefs	AO/AGs
TERFI	4	3	
DMI	2	2	
NSI	4	4	
WTI	2	2	
AGI	-	3*	
TGI	NA	1*	
ARI	3	-	
*AO/AG designated as AGI’s may be used to fulfill this requirement.			

Detachment			
INSTRUCTOR DESIGNATION	Pilots	Crew Chiefs	AO/AGs
TERFI	2	2	
DMI	1	1	
NSI	1	1	
WTI	1	1	
AGI	-	1*	
TGI		1*	
ARI	1	-	
*AO/AG designated as AGIs may be used to fulfill this requirement.			

9. Training Progression Models. The CH-53 training progression model provides community recommended core skill, qualification, and designation attainment timelines for the average crewmember. Refer to Figure 1-1.

101. MARINE HEAVY HELICOPTER SQUADRON (CH-53D) UNIT CORE COMPETENCY. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The CH-53 T&R Manual represents the collaborative effort of CH-53 Subject Matter Experts who designed training standards to maximize the full combat capabilities of the CH-53 and its crew. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aircrew maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained aircrews remain ready, relevant, and fully capable of supporting the MAGTF commander.

1. HMH Mission. Support the MAGTF Commander by providing assault support transport of combat troops, supplies, and equipment, day or night under all weather conditions during expeditionary, joint, or combined operations

2. Mission Essential Task List (METL)

a. (UJTL TA 1.1.2) Conduct Shipboard Deck Helicopter Landing Qualifications.

b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations.

(1) Maintain the capability to deploy and operate from advanced bases, expeditionary airfields, Forward Operating Bases (FOBs), and naval shipping.

(2) Perform organizational maintenance on assigned aircraft.

c. (UJTL TA 1.2.1) Conduct Air Assault Operations and Air Assault.

(1) Provide assault support transport of equipment, supplies, and combat troops using internal and/or external means.

(2) Provide support for casualty evacuation operations.

(3) Maintain self-defense capability from ground-to-air and air-to-air threats.

d. (UJTL TA 1.2.3) Conduct Amphibious Assault and Raid Operations.

(1) Conduct assault support for maritime special operations.

e. (UJTL TA 4.2) Distribute Supplies and Provide Transport Service.

(1) Conduct Aerial Re-supply.

(2) Provide support for mobile Forward Arming and Refueling Points (FARPS).

f. (UJTL TA 4.4) Conduct Joint Logistics Over-The-Shore Operations (JLOTS).

g. (UJTL TA 6.2) Conduct Joint Personnel Recovery.

(1) Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

(2) Augment local Search and Rescue (SAR) assets.

h. (UJTL TA 6.4) Conduct Noncombatant Evacuation.

(1) Provide support for evacuation operations.

3. Table of Organization. Refer to Table of Organization (T/O) 8950X managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for CH-53D units. As of this publication date, CH-53D units are authorized:

SQUADRON
10 Aircraft
27 Pilots
22 Crew Chiefs
16 Aerial Observers/Aerial Gunners

4. Core Capability. A core capable CH-53D unit is able to sustain 17 sorties listed below on a daily basis during contingency/combat operations. The sortie rates are based on 1.5 hour average sortie duration and assumes > 70 percent FMC aircraft and > 90 percent T/O aircrew on hand. If unit FMC aircraft < 70 percent or T/O aircrew < 90 percent, core capability will be degraded by a like percentage. A core capable unit is able to accomplish all tasks designated in the unit METL from a main base, expeditionary base, or amphibious platform.

5. METL/Core Skill Matrix. CH-53D core skills directly support the METL as follows:

CH53D PILOT/EAC												
METL	CORE SKILLS											
	FAM/ INST	INT	FORM	CAL	TERF	EXT	GTR	FCLP	AG	TAC	NS HLL	NS LLL
a. Conduct Shipboard Deck Landing Qualifications	X		X	X				X			X	X
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X		X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X		X	X	X	X	X	X

CH53D PILOT/EAC								
METL	CORE PLUS SKILLS							
	HIE	GTR	DM	NBC	CQ	MTG	TG	TAC
a. Conduct Shipboard Deck Landing Qualifications				X	X			
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X	X	X	X

6. CH-53D Core Model Minimum Requirements (CMMR). Squadron core competency reflects the minimum level of competency a squadron must achieve to perform its core capability. Squadron core competency is measured in terms of minimum unit Core Skill Proficiency (CSP) and minimum numbers of flight leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (unit CSP). In order to be considered proficient in a core skill (individual CSP), a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below. The standard CH-53D crew consists of 2 pilots, a crew chief, and an AO/AG. Crew chief surpluses may be used to satisfy AO requirements. **Position may be filled by either crew chief or AO/AG.

CH-53D CMMR (Unit CSP Requirements) Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO/AGs	Crews
FAM/INST	20	-	-	10
INT	-	10	10	10
FORM	16	8	8	8
CAL	16	8	8	8
TERF	16	8	8	8
EXT	16	8	8	8
GTR	16	8	8	8
FCLP	16	8	8	8
AG	12	6**		6
TAC	12	6	6	6
NS HLL	16	8	8	8
NS LLL	12	6	6	6
*HIE	16	8	8	8
*GTR	12	6	6	6
*DM	12	6	6	6
*NBC	16	8	8	8
*CQ	16	8	8	8
*MTG	-	6**		6
*TG	-	6**		6
*TAC	16	8	8	8

(1) Events Required to Attain Individual CSP. To initially attain CSP, a crewmember must successfully complete all of the T&R events listed in the chart below for that core skill.

CH-53D PILOT ATTAIN CORE SKILL PROFICIENCY (CSP)											
CORE SKILL	FAM/ INST	FORM	CAL	TERF	EXT	GTR	FCLP	TAC	AG	NS HLL	NS LLL
T&R Event Requirements to Attain CSP	S200R 201R S202R	210R	220 221R	230 231R	240 242R S340 341R 343R	S250 350R	S270 271 272 273R	290 390R	280 380R	S202 211R 222 223R 232R 233R 243 291R	320 321R 322R 330 331R 342R 391R

CH-53D PILOT ATTAIN CORE PLUS PROFICIENCY						
CORE PLUS SKILL	HIE	GTR	DM	NBC	CQ	TAC
T&R Event Requirements to Attain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	470R 471R 472R	490R 491R 492R 493R

(2) Events Required to Maintain Individual CSP. To maintain CSP, a crewmember must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

CH-53D PILOT MAINTAIN CORE SKILL PROFICIENCY (CSP)											
CORE SKILL	FAM/ INST	FORM	CAL	TERF	EXT	GTR	FCLP	TAC	AG	NS HLL	NS LLL
T&R Event Requirements to Maintain CSP	201R	210R	221R	231R	240 341R 343R	350R	273R	390R	280R 380R	211R 223R 233R 243 291R	321R 331R 342R 391R

CH-53D PILOT MAINTAIN CORE PLUS SKILL PROFICIENCY						
CORE PLUS SKILL	HIE	GTR	DM	NBC	CQ	TAC
T&R Event Requirements to Maintain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	472R	491R 492R 493R

b. Minimum Combat Leader Requirements. As a minimum, in order to be considered core competent, a unit must posses the following numbers of aircrew with the listed flight leadership designations.

Squadron	
DESIGNATION	Pilots
HAC	12
SEC LDR	8
DIV LDR	4
FLT LDR	4
AMC	3

7. Qualifications And Designations Tables. The tables below delineate T&R events required to be completed to attain initial qualifications and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification. Re-designation criteria shall be per the T&R Program Manual and paragraph 130.4 of this Manual.

Qualification	**Initial Event Qualification Requirements**
Instrument	IAW OPNAVINST 3710.7
TERF	230,231
DM	451,452
NSQ-HLL	211,222,223,232,233,291
NSQ-LLL	320,321,330,331,391
AG	280,281,380,381

Designation	**Designation Requirements**
HAC	610,611,612
SEC LDR	620,621,622
DIV LDR	630,631
FLT LDR	640
AIR MSN CDR	650
TERFI	570,571,572
DMI	Per MAWTS-1 Course Catalog
NSI	Per MAWTS-1 Course Catalog
WTI	Per MAWTS-1 Course Catalog
CSII	550,551,552
AGI (CC/AO)	Per MAWTS-1 Course Catalog
FCP	602, IAW OPNAVINST 4790 and command specific directives

8. Instructor Requirements. A squadron should possess the following numbers of aircrew with the listed instructor designations per the CH-53 T&R and MCO 3500.12C (WTTP).

Squadron			
INSTRUCTOR DESIGNATION	Pilots	Crew Chiefs	AO/AGs
TERFI	5	4	-
DMI	3	3	-
NSI	3	3	-
WTI	2	2	-
CSII	1	1	-
AGI	-	3*	
TGI	-	2*	

9. Training Progression Models. The CH-53 training progression model provides community recommended core skill, qualification, and designation attainment timelines for the average crewmember.

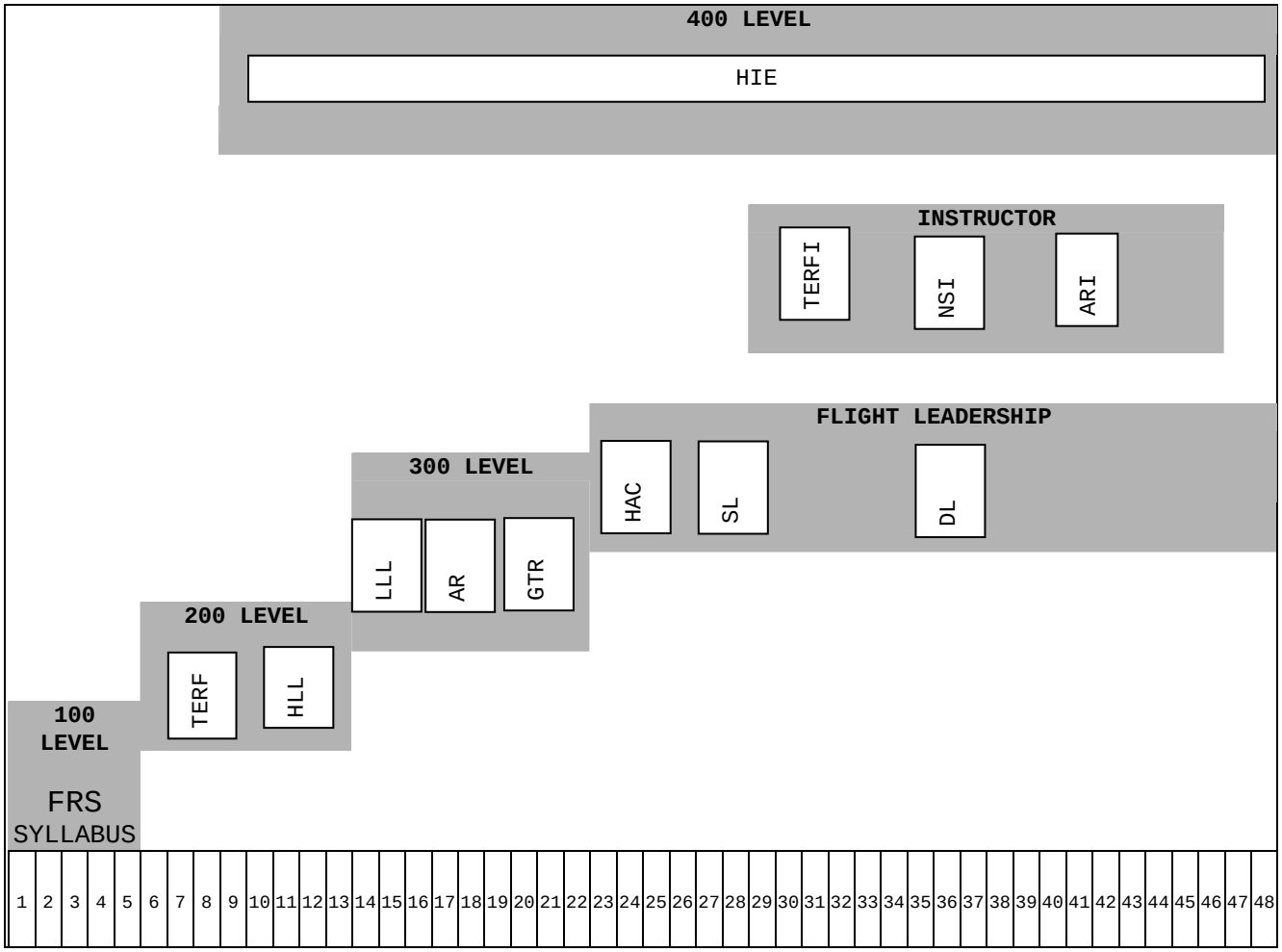

Figure 1-1.--CH-53 Training Progression Model.

102. POI FOR BASIC/TRANSITION PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-24	CH-53E Core Skill Intro	FRS
25-55	Core Skill Basic	Tactical Squadron
56-68	Core Skill Advanced	Tactical Squadron
68+	Core Plus	Tactical Squadron

103. POI FOR CONVERSION PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-12	Core Skill Introduction	Training Squadron
13-24	Core Skill Basic	Tactical Squadron
25-36	Core Skill Advanced	Tactical Squadron
36+	Core Plus	Tactical Squadron

104. POI FOR CH-53 SERIES CONVERSION PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-2	CH-53E Core Skill Intro	FRS
3-6	CH-53D Core Skill Intro	MAG-24
7-15	Core Skill Basic	Tactical Squadron
16-26	Core Skill Advanced	Tactical Squadron
27+	Core Plus	Tactical Squadron

105. POI FOR REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-4	CH-53D or CH-53E Core Skill Intro	FRS
5-9	Core Skill Basic	Tactical Squadron
10-26	Core Skill Advanced	Tactical Squadron
27+	Core Plus	Tactical Squadron

106. POI FOR MODIFIED REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Core Skill Introduction	Training Squadron

120. GROUND/ACADEMIC TRAINING COURSES OF INSTRUCTION. Utilize academic courseware as outlined in the Instructional System Development (ISD) program and Chapter 7 and 10 of the MAWTS-1 Course Catalog.

130. EVENT PERFORMANCE REQUIREMENTS

1. General

a. This Manual is written to allow for local conditions and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest developed and proven tactics.

b. All flights shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques.

c. The following event descriptors annotate the environment under which syllabus events are flown. The flight simulator is used for those events designated with an S. To provide commanding officers the maximum amount of flexibility for training, some events allow for the optional use of simulators or aircraft. Those events will use A/S for aircraft preferred, simulator optional and S/A for simulator preferred, aircraft optional. The visual system is required for completion of syllabus events in the simulator except for instrument flights that can be flown without the visual system.

Environmental Conditions	
Code	Meaning
	Shall be flown during day: (by exception - there is no use of a symbol)
N	Shall be flown at night: may be aided or unaided
N*	Shall be flown at night: must be flown unaided
(N*)	May be flown at night: If flown at night must be flown unaided
(N)	May be flown at night: If flown at night, may be flown aided or unaided
NS	Shall be flown at night: Mandatory use of Night Vision Devices
(NS)	May be flown at night: If flown at night, must be flown with Night Vision Devices
Note – If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

d. All references to HNVS, HUD, dual point externals, TBFDS, and aerial refueling apply only to the CH-53E. CH-53Ds will perform single point externals on all external events.

2. Syllabus Assignment

a. Basic, Transition, and Model Conversion pilots shall be assigned to the Basic POI. Refresher pilots will fly those flights designated by an MR or R in the flight description. The matrices found in paragraph 170 depict the events required for each POI. The squadron training officer shall ensure all Aircrew Training Forms (ATFs) are entered in section 3 of the Aircrew Performance Record (APR) for all initial qualification events designated by R, MR, SC, SCD, or SCE in the event description. These ATFs will replace ATFs previously entered in section 3.

(1) CH-53 Series Conversion. CH-53D to CH-53E Series Conversion pilots will fly those 100 level flights designated by an SCE in the event description at the FRS. CH-53E to CH-53D Series Conversion pilots will fly those 100 level flights designated by a SCD in the event description at MAG-24. CH-53D initial accession pilots will perform Basic Core Skill Introduction training at HMT-302 followed by CH-53E to CH-53D Series Conversion Core Skill Introduction training conducted at MAG-24. Upon completion of CH-53E to CH-53D Series Conversion Core Skill Introduction training, initial accession pilots shall resume the Basic POI syllabus per the T&R. Upon completion of 100 level SCD/E events, Series Conversion pilots shall continue to fly 200-400 level SC-coded events at the tactical squadron.

(2) CH-53E FRS Refresher Training. CH-53E Pilots requiring FRS Refresher Training shall fly the appropriate 100 level MR or R-coded events per MCO P3500.51 at the FRS. CH-53E pilots converting to the CH-53D requiring FRS refresher training, shall complete the appropriate 100 level MR or R-coded events at the FRS (HMT-302) followed by CH-53D Series Conversion training conducted at MAG-24.

(3) CH-53D FRS Refresher Training. CH-53D Pilots requiring FRS Refresher Training shall fly the appropriate 100 level MR or R events per MCO P3500.51 at MAG-24.

(4) Model Conversion. Pilots selected for model conversion to the CH-53 shall be assigned to the Basic POI. The following Basic POI events shall be waived at the FRS: 101, 102, 103, 104, 113, 115, 117, 119, 130, 133, 134, 135, 140, 141, 142, 152, 160, 162, and 181. Pilots selected for model

conversion to the CH-53D shall conduct 100 level training at the FRS per the above followed by CH-53D Series Conversion training conducted at MAG-24.

b. Squadron Refresher Syllabus. The Refresher Syllabus is predicated on the experience of the Refresher pilot. A pilot in the Refresher Syllabus should fly all R coded events. The commanding officer may tailor the Refresher Syllabus to fit the experience of the Refresher pilot per T&R Program Manual. When the R coded events within a stage of training are complete, the pilot may be credited with the CRP from the entire stage of training. This assumes the Refresher pilot has previous proficiency in a stage of training. If the Refresher pilot has no previous proficiency in a stage or particular event, then the Refresher shall fly the entire stage or all events not previously flown.

c. CH-53E to CH-53D Series Conversion and CH-53D Refresher Core Skill Introduction training. The MAG-24 standardization department shall manage and execute CH-53E to CH-53D Series Conversion and CH-53D Refresher Core Skill Introduction training (vice a CH-53 FRS). MAG-24 shall provide a training environment where other billet responsibilities do not detract from that training IAW MCO P3500.14 (Program Manual).

(1) CH-53D Core Skill Introduction training conducted at MAG-24 shall be conducted IAW the MAG-24 Core Skill Introduction Training Standardization Manual.

(2) Aircrew assigned to these syllabi shall check in to their parent squadron and subsequently be issued TAD orders to MAG-24. Aircrew shall be assigned to the MAG-24 standardization department for the duration of Core Skill Introduction training. Parent squadrons shall not assign these aircrew collateral duties during the course of Core Skill Introduction training.

(3) The MAG-24 standardization department shall be headed by the MAG DOSS and shall be manned by a minimum of three pilot and three Crew Chief CH-53D Core Skill Introduction Instructors (CSII). Each MAG-24 CH-53D Squadron shall be manned by a minimum of one pilot and one Crew Chief CSII.

(4) The MAG-24 standardization evaluator shall certify all CSIIs prior to designation. The MAG-24 standardization evaluator shall conduct an annual standardization check for all MAG CSIIs.

(5) Only the MAG-24 Commanding Officer may approve waiver/deferral of Core Skill Introduction training (per paragraph 305 of MCO P3500.14 (Program Manual)).

(6) MAG-24 shall coordinate aircraft support from CH-53D squadrons in support of these syllabi.

(7) All CH-53E to D Series Conversion flight events are 2.0 hours in duration.

4. Prior Designation/Qualification

a. Re-designation (HAC, SecLdr, DivLdr, FltLdr, AMC). Aircrew may be re-designated IAW the Mission and Instructor Designation/Qualification chapter, MCO 3500.14 (Program Manual).

b. Re-qualification (TERFQ, NSQ HLL, NSQ LLL, ARQ, DMQ). Upon demonstration of proficiency in a specific core skill, an aircrew may be re-qualified at the discretion of the commanding officer.

c. Instructor Re-designation (TERFI, ARI, DMI, NSI). Upon demonstration of proficiency in a specific core skill, an aircrew member may be re-designated as an instructor in that core skill (per this Manual and MAWTS-1 course catalog) at the discretion of the commanding officer.

5. Crew Position Designator. The emphasis in training for basic pilot training should be in the left seat through core skill introduction training.

6. Aircrew Evaluation Flights. All pilots shall have an evaluation form completed for the following:

a. NATOPS Check (CSIX-191, FL-612, and EVAL-600). A designated NATOPS instructor/assistant shall evaluate these flights.

b. Instrument Check (EVAL-601). A designated instrument instructor shall evaluate EVAL-601 annually.

c. All initial syllabus events or additional events recommended by the Squadron Standardization Board for the Basic, Series Conversion, or Refresher pilot will be flown with an aircraft commander who is proficient in that syllabus event and will evaluate the sortie and write an ATF.

d. For all syllabus events waived by the commanding officer, the squadron training officer shall place a waiver letter in section 3 of the APR.

7. CRM. Aircrews shall brief techniques of CRM for all flights and/or events.

8. Definition of Terms

a. Demonstrate: The description and performance of a particular maneuver is demonstrated by the instructor, observed by the PUI. The PUI is responsible for knowledge of the procedures prior to the demonstration of a required maneuver.

b. Discuss: An explanation of systems, procedures, or maneuvers during the brief, in-flight, or post-flight.

c. Introduce: The instructor may demonstrate a procedure or maneuver to a student, or may coach the PUI through the maneuver without demonstration. The PUI performs the procedures or maneuver with coaching as necessary. The PUI is responsible for knowledge of the procedures.

d. Practice: The performance of a maneuver or procedure by the PUI that may have been previously introduced in order to attain a specified level of performance.

e. Review: Demonstrated proficiency of a maneuver by the PUI.

131. CORE SKILL INTRODUCTION

1. Familiarization (FAM)

a. Purpose. To develop preliminary flight skills in the CH-53 and become familiar with aircraft flight characteristics, limitations, and emergency procedures; to develop proficiency in all maneuvers contained in the familiarization stage, and to develop proficiency to conduct safe operations during day and night.

b. General

(1) Prior to FAM-110, complete appropriate CBT/audio-visual training and conduct a thorough preflight, post flight inspection and a cockpit familiarization to include a blindfold cockpit check. FAM-110 through FAM-115 will normally be completed prior to flying higher stage events. Discuss and become thoroughly familiar with all aspects of CRM applicable to familiarization stage maneuvers as described in the appropriate CH-53 NATOPS Flight Manual and FRS Standardization Manual.

(2) Pilots shall conduct Core Skill Introduction Night Systems (NS) phase flights under High Light Level (HLL) ambient conditions with an NS FAM Instructor (NSFI) or NS Instructor (NSI).

c. Crew Requirement. IP/RAC/CC. AO required for FAM-121 and FAM-122.

d. Ground Training. Pilots should complete the appropriate simulator training prior to beginning the Core Skill Introduction training flight.

FAM-100 1.0 R,SCE,SCD S

Goal. Introduce normal cockpit procedures, start procedures, and shutdown procedures.

Requirement

Introduce:
- Pre-start checklist.
- Post APP start checklist.
- Starting engines/rotors checklist.
- Pre-taxi checklist.
- Cargo ramp and door procedures checklist.
- Operation of engine trim switches.
- Cruise checklist.
- Fuel transfer checklist.
- Monitoring of instruments (fuel gauges).
- Operation of the ICS and radios.
- Fuel management.
- Pre-landing checklist.
- Shutdown checklist.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-101 1.0 SCD S

Goal. Introduce aircraft emergencies, normal ground and flight procedures. Review start/shutdown procedures.

Requirement

Introduce:
- Aircrew brief.
- External fuel tank jettison.
- Cargo ramp/door operation.
- Engine start emergencies.
- Vertical takeoff to a hover.
- Transition to forward flight.
- Normal approaches to a hover and normal vertical landing.
- Engine compartment fire on the ground.
- Single and/or dual engine compartment fires in-flight.
- Simultaneous engine compartment fires in-flight.
- APP or cabin heater fire.
- Fuselage fire.
- Fuel dump.

Practice:
- Start/shutdown procedures.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-102 1.0 SCD S

Goal. Introduce engine malfunctions. Practice cockpit and flight procedures, start/shutdown checklist and all previously introduced emergencies.

Requirement

Introduce:
- Blade/pylon fold system switchology.
- CH-53 NATOPS brief/CH-53 NATOPS debrief.
- Maximum performance takeoff.
- Straight-in approach.
- Engine restarts during flight.
- Crosswind landing.
- Single engine failure (hover and takeoff).
- Effects of gross weight on single and/or dual engine performance.
- Single and/or dual engine failure at altitude.
- Engine shutdown in-flight.
- Compressor stall.
- Engine power loss.
- Engine post-shutdown fire.

Practice:
- Cockpit and flight procedures.
- Start/shutdown checklist.

All previously introduced emergencies.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-103 1.0 SCD S

Goal. Introduce running landings and autorotations. Practice aircraft emergencies, previously introduced flight procedures and normal cockpit procedures.

Requirement

Introduce:
Running takeoff/landing.
Wave-off.
Single and/or dual engine wave-off/landing.
Power recovery autorotation.
High angle of bank maneuvering and the effects of variables (angle of bank, power required, descent rate, gross weight, temperature, density altitude, etc.) on the performance of the aircraft.
Dual engine failure at altitude.
Engine overspeed.
Single and/or dual engine failure (hover/takeoff).
Nf flex shaft failure.

Practice:
Aircraft emergencies.
Previously introduced flight procedures.
Normal cockpit procedures.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-104 1.0 SCD S

Goal. Introduce gearbox malfunctions. Introduce basic CRM concept. Practice previously introduced emergency and flight procedures.

Requirement

Introduce:
Engine chip detector light.
Control linkage failure.
Power deterioration.
Engine oil pressure high caution light, high oil temperature, engine oil quantity low.
Nose gearbox chip detector light/failure.
Accessory gearbox oil system failure.
Accessory gearbox chip detector light/failure.
Main gearbox oil system failures.

Main gearbox chip locator light/failure.
Power train failures.
Tail rotor drive system failure, tail rotor gearbox or intermediate gearbox failure, and tail rotor or intermediate gearbox chip detector light.

Practice:
Previously introduced emergencies.
Flight procedures.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-105 1.5 R,SCE S

Goal. Introduce communication skills IAW CRM techniques. Practice all ground, flight, and aircraft emergency procedures.

Requirement

Introduce:
Obstacle takeoff and approach.
Smoke and fume elimination.
AFCS computer malfunctions/mode failures , total AFCS failure.
BIM/Blade Pressure caution light (in-flight).
Approach and landing with tail rotor control system failure.
Tail rotor tandem servo malfunction.
Fuel filter bypass light.
Hydraulic fire in main rotor pylon.
Use of GPS system.
Sender/receiver responsibilities and overcoming communication barriers. Discuss ICS switchology and techniques, visual and standard terminology.

Practice:
Ground, flight, and aircraft emergency procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-106 1.0 R,SCE S

Goal. Conduct Progress Check. Introduce communication skills IAW CRM techniques.

Requirement

Introduce:
Ground resonance procedure.
Power settling (vortex ring state).

Settling with power.
Dynamic rollover.
Electrical fire.
Alternating/Direct current system failures.
Rotor damper failure.
Lightning strike.
Most conservative response rule, the two-challenge rule, and task saturation with compound emergencies.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FAM-107 1.0 SCD S NS

Goal. Introduce NS adaptation.

Requirement

Introduce:
NS set-up/operation.
Cockpit lighting.
Blind cockpit drills.
NS malfunctions.
NS goggle/degoggle procedures.
NS scan techniques.
Basic FAM pattern and approaches utilizing NS. Emergencies while wearing NS.
NS failure.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

Prerequisites. The Night Imaging and Threat Evaluation (NITE) Lab syllabus.

External Syllabus Support. WST/APT.

FAM-110 1.5 SCE 1 CH-53E

Goal. Introduce start, normal ground, and flight procedures including low work and normal approaches.

Requirement

Discuss:
Fuel management.
Fuel dump system/procedures and auxiliary fuel tank jettison system/parameters.
Fuel supply system, fuel transfer system, fuel purge system, and pressure refueling system.

Introduce:
Normal cockpit procedures.
Starting procedures.
Radio procedures.

Taxiing.
Vertical takeoffs and landings.
Transition to forward flight.
Operation of engine trim switches.
Normal approaches to a hover.
Ramp operation.
Shutdown procedures.
Conduct an area familiarization and local course rules flight.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. Preflight walk-around, Egress, and local course rules exam.

FAM-111 1.5 1 CH-53E

Goal. Introduce precision hover/low work. Practice start, normal ground, and previously introduced flight procedures.

Requirement

Discuss:
Engine restart in-flight.
Blade and pylon fold.
Utility hoist procedures.
Effects of Pilot Induced Oscillations (PIO).
Exhaust gas re-ingestion.
Effects of high AOB maneuvering and subsequent aircraft response.
No 2 engine dual thermal detection system.
No 2 engine over-heat caution light in flight.
Engine start/ignition system.
Hot start, hung start.
AOB limitations.
Emergency shutdown procedures.

Demonstrate:
High AOB maneuvers.

Introduce:
Square patterns/turns on the spot.
Precision (stable) hover.
Air taxi.
Single engine and/or dual engine flight characteristics at altitude.

Practice:
Start procedures.
Normal ground procedures.
Previously introduced flight procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-112 1.5 MR 1 CH-53E

Goal. Introduce engine failure(s) at altitude, running takeoffs and landings, precision approaches, and practice autorotations.

Requirement

Discuss:
- Engine system/limitations.
- Engine overspeed/Nf flex shaft failure.
- Compressor stall.
- Engine power loss.
- Engine high/low oil pressure.
- Engine high oil temperature.
- Engine chip detector light.
- Control linkage failure.
- Effects of gross weight on single and/or dual engine performance.
- Engine shutdown in flight/fuel siphoning.
- Engine restart in flight.

Introduce:
- Simulated single and/or dual engine failure at altitude.
- Running takeoffs and landings.
- Precision approaches to a hover.
- Autorotations with power recovery.

Practice:
- Cockpit procedures.
- Hover/low work.
- Previously introduced FAM maneuvers.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-113 1.5 1 CH-53E

Goal. Introduce no hover landings. Practice previously introduced FAM maneuvers and simulated emergency procedures.

Requirement

Discuss:
- The effects of aircraft gross weight on single and/or dual engine performance capability.
- Single/dual engine wave-off.
- Fire detection/extinguishing system.
- Engine compartment fire on the ground.
- Engine compartment fires in flight.
- APP or cabin heater fire.
- Fuselage fire.
- Hydraulic fire in main rotor pylon.
- Engine post shutdown fire.
- Electrical fire.
- Smoke and fume elimination.
- Fire during ground refueling.

Introduce:
No hover landings.
Single and/or dual engine wave-offs.
Simulated single and/or dual engine failure during takeoff.
Simulated single and/or dual engine approaches and landings (running and to a spot).
Simulated single and/or dual engine failure above 50 feet AGL.

Practice:
Previously introduced FAM maneuvers.
Simulated emergency procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-114 1.5 MR,R,SCE 1 CH-53E

Goal. Introduce simulated partial/total AFCS failure. Practice FAM and previously introduced simulated emergency procedures.

Requirement

Discuss:
AFCS system/functions.
Inner/outer loop.
AFCS servo functions.
AFCS servo hardover.
Longitudinal bias actuator.
FAS functions.
Trim functions.
Desensitizer failure.
AFCS computer malfunctions/mode failures.
Total AFCS failure.
Ground resonance.

Introduce:
Obstacle takeoff, approach.
Partial/total AFCS failure.

Practice:
Previously introduced FAM maneuvers.
Simulated emergency procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-115 1.5 1 CH-53E

Goal. Introduce high AOB maneuvers. Practice all FAM and simulated emergency procedures.

Requirement

Discuss:
BIM/IBIS blade systems.

BIM/Blade pressure caution light in flight.
Flight control system.
Control couplings.
Damper system/failure.
Primary tandem servos operation/malfunction.
Approach and landing with a tail rotor control system malfunction.

Introduce:
High AOB maneuvers.

Practice:
All FAM maneuvers.
Simulated emergency procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-116 1.5 R,SCE 1 CH-53E

Goal. Practice all FAM maneuvers, and simulated emergency procedures.

Requirement

Discuss:
Transmission system/limitations.
Chip detection system.
Nose gearbox chip location light.
Nose gearbox failure.
Accessory gearbox oil system failure.
Accessory gearbox chip locator light.
Accessory gearbox failure.
Main gearbox chip locator light.
Main gearbox oil system failure.
Loss of main gearbox lubrication.
Power train failure.
Tail rotor or intermediate gearbox chip detector light.
Tail rotor gearbox or intermediate gearbox failure.
Tail rotor drive system failure.
Pylon unsafe for flight light.

Practice:
All FAM maneuvers.
Simulated emergency procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-117 1.5 1 CH-53E

Goal. Practice all FAM maneuvers and simulated emergency procedures.

Requirement

Discuss:
- Rotor brake system.
- APP.
- Hydraulic power supply systems.
- Hydraulic power supply system failures.
- Utility hydraulic subsystems.

Practice:
- All FAM maneuvers.
- Simulated emergency procedures.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-118 1.5 R,SCE 1 CH-53E

Goal. Review all FAM maneuvers and simulated emergency procedures.

Requirement

Discuss:
- Ground cushion and ground effect.
- Effect of wind on translational lift.
- Effect of temperature and pressure altitude on power available.
- Power required for flight at various airspeeds (hover to V_{MAX}).
- Effects of gross weight, altitude, temperature, turbulence, and wind on power required for hover both in and out of ground effect.
- Effects of gross weight, altitude, temperature, and turbulence on blade stall.
- Maximum speed level flight with turns for existing ambient conditions.
- Conditions leading to power settling and settling with power.
- Landing gear system.
- Landing gear system failure.
- Bearing Monitor System.
- Bearing VIB or TEMP DETECT and LIMIT.
- BMS fault isolation.

Practice:
- All FAM maneuvers.
- Simulated emergency procedures.

Performance Standards. IAW CH-53E NATOPS and FRS Standardization Manual.

FAM-119 1.5 1 CH-53E

Goal. Conduct Progress Check.

Requirement

Practice:
All FAM maneuvers.
Simulated emergency procedures.

Performance Standards. Demonstrate proficiency of FAM maneuvers IAW CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. CH-53E NATOPS open book exam.

FAM-120 1.5 MR,R,SCE 1 CH-53E N*

Goal. Introduce FAM maneuvers at night.

Requirement

Discuss:
Aircraft lighting systems.
Electrical failures.
Electrical power supply system.
Single and multiple generator failure.
Single and dual rectifier failure.
Minimum aircraft equipment required for night flight.

Introduce:
Normal procedures and maneuvers under conditions of darkness at a lit airfield.
Night basic airwork, low work, and landings with various light configurations.
Tip path plane awareness.
HNVS operation.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

FAM-121 1.5 1 CH-53E NS

Goal. Introduce NS low work and pattern work.

Requirement

Discuss:
NS operations/failures.
Cockpit lighting.
Crew coordination.
Comfort level.
Low altitude emergencies
Inadvertent IMC procedures.
Aircraft external lighting.
NS visual characteristics and limitations.
Scan techniques.

Introduce:
Use of NS while performing taxi, basic low work, hover, and vertical takeoffs/landings at an unlit field or packed surface.

Performance Standards. Per CH-53E NATOPS, FRS Standardization Manual, and MAWTS-1 NVD manual.

Prerequisites. The Night Imaging and Threat Evaluation (NITE) Lab syllabus. FAM-120 and based off of simulator availability, FAM-107.

FAM-122 1.5 R,SCE 1 CH-53E NS

Goal. Practice low work, takeoffs/landings and pattern work while using NS.

Requirement

Discuss:
- Solar Lunar Almanac Program (SLAP).
- Light Interference Filters (LIFS).
- Effects of shadowing on NS operations.
- Effects of atmospheric conditions on NS performance.
- Blooming/de-gaining.
- Approach pattern.
- External aircraft lighting.
- Spectrum viewed by NS (FLIR/NS).

Practice:
- Use of NS while performing taxi, basic low work, hover, and vertical takeoffs/landings at an unlit field or packed surface.

Performance Standards. Per CH-53E NATOPS, FRS Standardization Manual, and MAWTS-1 NVD manual.

Prerequisites. FAM-121.

FAM-123 2.0 SCD 1 CH-53D

Goal. Introduce CH-53D specific aircraft performance characteristics and FAM maneuvers.

Requirement

Discuss:
- Engine system/limitations.
- Engine overspeed/Nf flex shaft failure.
- Compressor stall.
- Engine power loss.
- Engine high/low oil pressure.
- Engine high oil temperature.
- Engine chip detector light.
- Control linkage failure.
- Effects of gross weight on single engine performance.
- Engine shutdown in flight/fuel siphoning.
- Engine restart in flight.
- Fire detection/extinguishing system.
- Engine compartment fire on the ground.
- Engine compartment fires in flight.

Engine post shutdown fire.
Emergency shutdown procedures.
Transmission system/limitations.
Chip detection system.
Nose gearbox chip location light.
Nose gearbox failure.
Accessory gearbox oil system failure.
Accessory gearbox chip locator light.
Accessory gearbox failure.
Main gearbox chip locator light.
Main gearbox oil system failure.
Loss of main gearbox lubrication.
Effects of Pilot Induced Oscillations (PIO).
CRM procedures.
Local area course rules.

Demonstrate:
Autorotations with power recovery.

Introduce:
Startup and shutdown procedures.
Taxiing.
Vertical takeoffs and landings.
Transition to forward flight.
Normal approaches to hover and no hover landings.
Running takeoffs and landings.
Precision approaches to hover and no hover landings.
Simulated single engine failure at altitude.
Conduct an area familiarization and local course rules flight.

Performance Standards. Per CH-53D NATOPS and MAG-24/CH-53D FRS Standardization Manual.

Prerequisites. FAM 100-104. Preflight walk-around, Egress drill (as required), and local course rules exam.

FAM-124 2.0 SCD 1 CH-53D

Goal. Introduce CH-53D specific simulated emergency procedures and practice previously introduced FAM maneuvers.

Requirement

Discuss:
Rotor brake system.
APP.
APP or cabin heater fire.
Fuselage fire.
Hydraulic fire in main rotor pylon.
Electrical fire.
Smoke and fume elimination.
Fire during ground refueling.
Hydraulic power supply systems.
Hydraulic power supply system failures.
Utility hydraulic subsystems.
AFCS system/functions.

AFCS servo functions.
AFCS servo hardover.
Trim functions.
AFCS computer malfunctions/mode failures.
Total AFCS failure.
Ground resonance.
Flight control system.
Control couplings.
Damper system/failure.
Primary tandem servos operation/malfunction.
Approach and landing with a tail rotor control system malfunction.
Tail rotor or intermediate gearbox chip detector light.
Tail rotor gearbox or intermediate gearbox failure.
Tail rotor drive system failure.
Power train failure.
Pylon unsafe for flight light.

Introduce:
Simulated emergency procedures.
Simulated single engine failure during takeoff.
Simulated single engine approaches and landings (running and to a spot).
Simulated single engine failure above 50 feet AGL.
Autorotations with power recovery.
Obstacle takeoff, approach.
Partial/total AFCS failure.
High AOB maneuvers.

Practice:
Previously introduced FAM maneuvers.

Performance Standards. Per CH-53D NATOPS and MAG-24/CH-53D FRS Standardization Manual.

Prerequisites. FAM-123.

2. Instruments (INST)

a. Purpose. To develop proficiency in instrument flight procedures while using all installed navigation aids.

b. General

(1) All instrument stage flights should terminate with an instrument approach, when possible.

(2) Pilots may use the simulator for any instrument flight requirement; however, they may use it for no more than 50 percent of the total instrument syllabus requirements. The simulator will not satisfy the OPNAV night minimums requirement.

c. Crew Requirement. IP/RAC/CC (AO required for NS events).

INST-130 1.0 SCD S

Goal. Introduce basic instruments, TACAN approaches, and decision making IAW CRM techniques.

Requirement

Introduce:
- Instrument flight checklist.
- Instrument takeoff.
- Level speed change.
- Standard rate timed turns.
- Vertical S-1 pattern.
- Oscar pattern.
- Turn pattern.
- TACAN approach.
- Point-to-point navigation.
- Holding.
- Decision making in the CH-53 IAW CRM techniques.
- Troubleshooting strategies for degraded aircraft systems in IMC.

Performance Standards. IAW CH-53 NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

External Syllabus Support. WST/APT.

INST-131 1.0 R,SCE S

Goal. Introduce partial panel flight, VOR/ADF procedures and adaptability/flexibility per CRM techniques.

Requirement

Introduce:
- Partial panel flight.
- VOR/ADF approach.
- Holding.
- Adaptability/flexibility in the CH-53E per CRM techniques.

Discuss:
- Changes in mission from the briefing, crew-member incapacitation, and overcoming personality differences within the cockpit and cabin.

Practice:
- TACAN procedures.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

External Syllabus Support. WST/APT.

INST-132 1.0 R,SCE S

Goal. Introduce ILS/localizer approaches and mission analysis per CRM techniques. Practice aircraft emergency procedures.

Requirement

Introduce:
ILS and localizer approaches.
Mission analysis in the CH-53E per CRM techniques.

Discuss:
The three stages of mission analysis, and standardized procedures.

Practice:
TACAN and VOR approaches.
Previously introduced emergency procedures.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

External Syllabus Support. WST/APT.

INST-133 1.0 SCD S

Goal. Introduce unusual attitudes and recovery procedures, PAR, ASR approaches and situational awareness considerations in the CH-53 per CRM techniques. Practice aircraft emergency procedures.

Requirement

Introduce:
Unusual attitudes and recovery procedures.
PAR and ASR approaches.
Situational awareness considerations in the CH-53 per CRM techniques.
Task fixation during an instrument approach with an emergency or degraded system.

Practice:
Aircraft emergency procedures.

Performance Standards. Per CH-53 NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

External Syllabus Support. WST/APT.

INST-134 1.0 S

Goal. Introduce radio failure, ATC procedures in IMC conditions and leadership principles per CRM techniques.

Requirement

Introduce:
HF Radio.
IFR departure.
COMM/NAV failure under IMC.
Single and/or dual engine missed approach.
IFR canned route (Flight planning).

Leadership principles in the CH-53E per CRM techniques. Command authority, crewmember relationships in the cockpit and cabin, and division of tasks.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

External Syllabus Support. WST/APT.

INST-135 1.5 A/S 1 CH-53E (N)

Goal. Introduce basic instrument procedures and instrument coordination patterns.

Requirement

Introduce:
- Instrument checklist.
- Instrument takeoff (ITO).
- Attitude instrument flying.
- Standard rate/half standard rate turns. Recovery from unusual attitudes.
- Vertical S-1.
- Oscar patterns.
- Partial panel.
- AFCS failure.
- Inadvertent entry into IFR conditions.
- Lost plane procedures.
- Lightning strike.
- Emergency descent.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

INST-136 1.5 MR,R,SCE A/S 1 CH-53E (N)

Goal. Introduce ADF, VOR and TACAN procedures.

Requirement

Discuss:
- Approach minimums and helicopter-only approaches.

Introduce:
- Time-distance checks.
- ADF procedures.
- Operation of the transponder modes.
- VOR procedures.
- TACAN procedures.
- Point-to-point navigation.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

INST-137 1.5 R,SCE A/S 1 CH-53E (N)

Goal. Introduce precision approaches.

Requirement

Discuss:
BDHI/course indicator switches.
ILS/LOC and LOC back course approaches.

Introduce:
LOC/ILS procedures.
PAR procedures.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

INST-138 1.5 A/S 1 CH-53E (N)

Goal. Conduct IFR flight to an outlying airfield. Instrument progress check.

Requirement. Plan, file, brief, and fly an IFR flight away from home field.

Discuss:
Range performance charts in the CH-53E NATOPS Manual.

Performance Standards. Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and FRS Standardization Manual.

INST-139 2.0 SCD 1 CH-53D (N)

Goal. Introduce CH-53D basic instrument, TACAN, and PAR procedures.

Requirement

Discuss:
Approach minimums and helicopter-only approaches.
Time-distance checks.
Inadvertent entry into IFR conditions.
Lost plane procedures.
Lightning strike.
Emergency descent.
BIM/IBIS blade systems.
BIM/Blade pressure caution light in flight.

Introduce:
Instrument checklist.
Instrument takeoff (ITO).
Attitude instrument flying.
Standard rate/half standard rate turns.
Recovery from unusual attitudes.
Vertical S-1.
Oscar patterns.
Partial panel.
TACAN procedures.
PAR procedures.
GPS procedures.
Point-to-point navigation.

AFCS failure.
Night Systems (if required).

Performance Standards. Per CH-53D NATOPS and MAG-24/CH-53D FRS Standardization Manual.

Prerequisites. INST-130, INST-133, and FAM-123.

3. Navigation (NAV)

a. Purpose. To navigate without radio navigational aids and identify positions by using charts and maps.

b. Crew Requirement. 141: IP/RAC/CC. 142: IP/RAC/CC/AO.

c. Ground Training. N-PFPS flight planning, GPS course as required by FRS.

NAV-140 1.0 S

Goal. Introduce use of N-PFPS, GPS and HNVS.

Requirement. Utilize N-PFPS to develop a route card for GPS programming to a minimum of six waypoints.

Discuss:
GPS set-up, programming, operation, and use.

Introduce:
Use of Global Positioning System (GPS) and HNVS operation.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

NAV-141 2.0 1 CH-53E

Goal. Introduce visual and GPS navigation.

Requirement. While using 1:250,000 and 1:50,000 maps, plan a navigation flight to a minimum of six terrain features using N-PFPS for planning. Pilots should conduct this flight between 200 and 500 feet AGL.

Discuss:
Navigation techniques.
Map preparation.
Checkpoint selection.
Boundaries/limiting features.
Wind correction in navigation.
Chart Update Manual (CHUM).
Portable Flight Planning Software (N-PFPS).
GPS operation/use.

Introduce:
In-flight route changes.
Use of Global Positioning System (GPS).

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

NAV-142 2.0 1 CH-53E NS

Goal. Practice NS navigation. Incorporate the use of N-PFPS and GPS.

Requirement. Plan and navigate to a minimum of six predetermined check points while using 1:250,000 and 1:50,000 scale maps.

Discuss:
Use of the FLIR.
Low level hazards.
Stress map interpretation.
Dead reckoning techniques.

Practice:
Use of GPS and N-PFPS.

Performance Standards. Per CH-53E NATOPS, MAWTS-1 NVD Manual and FRS Standardization Manual.

Prerequisites. FAM-122.

4. Formation (FORM)

a. Purpose. To develop parade and cruise formation principles and techniques.

b. Crew Requirement. 151: IP/RAC/CC. 152: IP/RAC/CC/AO.

FORM-150 1.0 R,SCE S

Goal. Introduce day formation principles.

Requirement

Discuss:
Aircraft lighting, closure rate, recovery from unusual attitudes, CRM, and comfort level.

Introduce:
Section takeoffs, cruise principles, crossovers, and section approaches.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

External Syllabus Support. WST/APT.

FORM-151 1.5 MR,R,SCE 2 CH-53E

Goal. Introduce parade, cruise formation and section landings.

Requirement

Discuss:
- Visual checkpoints for formation position.
- Formation considerations.
- Parade and Cruise formations.
- Cruise turn principles.
- Loss of visual contact.
- Break-up and rendezvous.
- Over-run procedures.

Introduce:
- Section takeoffs, parade position, crossovers, breakups, rendezvous, lead changes, landings, cruise formations, and IMC break-up.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisite. CAL-161 if conducted to a CAL site.

Range Requirements. Approved CAL/MAL site if conducted to a CAL site.

FORM-152 1.5 2 CH-53E NS

Goal. Introduce NS formation procedures and section CAL landings.

Requirement

Discuss:
- Aircraft lighting.
- Closure rate.
- CRM and comfort level.
- NS visual checkpoints for formation position.

Introduce:
- Night section takeoffs.
- Cruise principles.
- Crossover.
- Lead changes
- Section landings.

Performance Standards. Per CH-53E NATOPS, MAWTS-1 NVD Manual, and FRS Standardization Manual.

Prerequisite. FAM-122, FORM-151, CAL-162, and CAL-163.

Range Requirements. Approved CAL/MAL site.

5. Confined Area Landings (CAL)

a. Purpose. Develop takeoff and landing skills in confined areas.

b. Crew Requirement. 161/162: IP/RAC/CC..163: IP/RAC/CC/AO.

CAL-160 1.0 SCD S NS

Goal. Introduce night systems CAL approaches.

Requirement

Discuss:
Instrument scan requirements.
Crew coordination.

Introduce:
FLIR system, operation and utilization (53E).
NS HUD operation and utilization (53E).

Performance Standards. Per CH-53 NATOPS, MAWTS-1 NVD Manual and FRS Standardization Manual.

External Syllabus Support. WST/APT.

CAL-161 1.5 MR,R,SCE,SCD 1 CH-53

Goal. Practice precision approaches and introduce their application to CALs.

Requirement

Discuss:
Landing gear system/limitations.
Dynamic rollover.
Slope landing technique/limitations.
Loss of visual reference during landing.
Power settling.
Settling with power.
Main and tail rotor clearance factors over sloping or uneven terrain.
LZ considerations.

Practice:
Precision approaches to confined areas.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

Prerequisite. N/A. FAM-124 for CH-53E to D Series Conversion POI individuals.

Range Requirements. Approved CAL/MAL site.

CAL-162 1.5 SCD 2 CH-53

Goal. Introduce section CAL approaches and landings.

Requirement

Discuss:
Hazards associated with section CAL landings.
CRM.

Introduce:
Day Section CAL approaches and landings.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual.

Prerequisite. CAL-161 and FORM-151. CAL-162 may be flown in conjunction with FORM-151.

Range Requirements. Approved CAL/MAL site.

CAL-163 2.0 1 CH-53E NS

Goal. Introduce NS confined area landings.

Requirement

Discuss:
Precision obstacle approaches.
CRM/comfort level.
Aircraft lighting.

Practice:
Night CAL approaches and takeoffs with NS.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisite. FAM-122,CAL-161 and based off of simulator availability SCAL-160.

Range Requirements. Approved CAL/MAL site.

6. External Loads (EXT)

a. Purpose. To develop skills necessary for external cargo operations.

b. General. Prior to EXT-170, refer to operational and safety considerations discussed in the appropriate NATOPS Flight Manual and MCRP 4-23E and Multi-Service Helicopter Sling Load Manual. Discuss and become familiar with all aspects of CRM applicable to external operations as described in the appropriate CH-53 NATOPS Flight Manual.

c. Crew Requirement. IP/RAC/CC/AO.

d. External Syllabus Support. Helicopter Support Team (HST).

EXT-170 1.0 SCD,SCE 1 CH-53

Goal. Introduce single point external cargo operations.

Requirement

Discuss:
- Precision hover.
- Flight envelopes with external loads.
- Weight and balance calculations.
- Power settling/settling with power.
- Operational power checks.
- Single point performance checks.
- Single point suspension system/operations.
- Cargo pickup and delivery procedures.
- Power available/required considerations.
- Cargo release modes.
- Cargo jettison procedures.
- Hook open advisory light in flight.
- DSEN failure.

Introduce:
- Cargo pickup and release procedures.
- CRM.
- Voice signals/standardized terminology.

Performance Standards. Perform five hookups and releases, or until proficiency is demonstrated per CH-53 NATOPS, MCRP 4-23E and Multi-Service Helicopter Sling Load Manual, and FRS Standardization Manual.

Prerequisite. CAL-161. FAM-124 for CH-53E to D Series Conversion POI individuals.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST and single point load.

EXT-171 1.0 SC E 1 CH-53E NS

Goal. Introduce single point external cargo operations utilizing NS.

Requirement

Discuss:
- CRM.
- Comfort level.
- NS scan techniques.
- Aircraft emergencies.
- Cargo jettison procedures.
- Power requirements.
- Aircraft lighting.
- Landing zone markings.

Introduce:
- External cargo pickup and delivery utilizing NS.

Performance Standards. Perform five hookups and releases, or until proficiency is demonstrated per CH-53E NATOPS,

MCRP 4-23E and Multi-Service Helicopter Sling Load Manual, and FRS Standardization Manual.

Prerequisite. CAL-163 and EXT-170.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST single point load.

EXT-172 1.5 MR,R,SCE 1 CH-53E

Goal. Introduce dual point procedures.

Requirement

Discuss:
- Dual point suspension system.
- Dual point suspension system operations/limitations.
- CRM.
- Emergencies encountered during external operations.
- Forward/Aft hook open advisory light in flight.
- Pilot induced/assisted oscillations.
- Cargo jettison.
- CG load indicator system.

Introduce:
- External cargo pickup and release procedures utilizing the dual point external system.

Performance Standards. Perform 5 hookups and releases, or until proficiency is demonstrated per CH-53E NATOPS, MCRP 4-23E and Multi-Service Helicopter Sling Load Manual, and FRS Standardization Manual.

Prerequisite. CAL-161.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and dual point load.

EXT-173 1.5 R,SCE 1 CH-53E NS

Goal. Introduce dual point procedures at night utilizing NS.

Requirement

Discuss:
- NS considerations.
- CRM
- Comfort level.
- Scan techniques.
- Aircraft emergencies.
- Cargo jettison procedures.
- Aircraft lighting.
- Landing zone markings.

Introduce:
External cargo pickup and release procedures utilizing NS.

Performance Standards. Perform 5 hookups and releases or until proficiency is demonstrated per CH-53E NATOPS, MCRP 4-23E and Multi-Service Helicopter Sling Load Manual, and FRS Standardization Manual.

Prerequisite. CAL-163 and EXT-172 (53E).

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and dual point load.

7. Terrain Flight (TERF)

a. Purpose. To introduce skills necessary to perform TERF maneuvers safely. Emphasize the importance of crew coordination, comfort level, and standard terminology.

b. General

(1) T&R Program Manual requires a designated TERF instructor for all initial TERF flights.

(2) CH-53 TAC Manual contains all maneuver descriptions, and the current MAWTS-1 Helicopter Academic Support Package explains all maneuvers. The MAWTS-1 Academic Support Package contains the prerequisite academic lectures that support the TERF stages.

(3) T&R Program Manual establishes all currency requirements/TERF altitude and airspeed limitations.

(4) The RAC shall complete academic training prior to commencing the TERF flight syllabus.

c. Crew Requirement. IP/RAC/CC/AO.

d. Ground Training. Pilots shall complete "Terrain Flight Introduction" in the MAWTS-1 Academic Support Package prior to the flight.

TERF-180 1.5 R,SCE,SCD 1 CH-53

Goal. Introduce TERF maneuvers. Demonstrate TERF navigation.

Requirement

Discuss:
TERF maneuvers.
CRM.
Comfort level.
Reduced reaction time.
Emergency procedures at low altitudes.
Climb-to-cope.
Standardized terminology.
Common mistakes.

Hazard maps.
Currency requirements.
Blade walk-around.

Introduce:
Operational power checks.
Masking and unmasking.
TERF turns.
Rolls, bunts.
Quick stops.
Low level/contour profiles.
Using a 1:50,000 scale map, demonstrate TERF navigation.

Performance Standards. Per CH-53 NATOPS, ANTTP 3-22.3-CH53, and FRS Standardization Manual.

Prerequisite. FAM-124 for CH-53E to D series conversion POI individuals.

Range Requirements. TERF maneuver area/route and CAL/MAL site.

TERF-181 1.5 1 CH-53E

Goal. Introduce TERF navigation. Practice TERF maneuvers.

Requirement

Discuss:
CRM.
Comfort levels.
Common terms.
Obstacle clearance.
Low altitude emergencies.

Practice:
TERF maneuvers and contour profile navigation.

Performance Standards. Per CH-53E NATOPS, ANTTP 3-22.3-CH53, and FRS Standardization Manual.

Range Requirements. TERF maneuver area/route and CAL/MAL site.

8. Review (REV)

a. Purpose. To demonstrate proficiency in performing duties as a core skill introduction complete copilot per CH-53 NATOPS and appropriate pubs.

b. Crew Requirement. IP/RAC/CC.

c. Ground Training. RACs should complete CH-53 NATOPS closed book examination prior to the flight.

REV-190 1.5 R,SCE,SCD 1 CH-53

Goal. Review Core Skill Introduction training.

Requirement

Practice:
All FAM stage maneuvers.
Instrument stage maneuvers.
Confined area landings.
External cargo procedures.
If possible, formation flight.

Performance Standards. Per CH-53 NATOPS and FRS Standardization Manual. RAC is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. For CH-53D Series Conversion and Refresher POI individuals: CH-53D NATOPS open book exam.

Range Requirements. CAL/MAL site.

9. Core Skill Introduction Check (CSIX)

a. Purpose. To demonstrate proficiency in performing the duties as a core skill introduction copilot per CH-53 NATOPS and appropriate pubs.

b. General

(1) The RAC is responsible for all maneuvers and emergency procedures in the Core Skill Introduction phase.

(2) A CH-53 NATOPS qualified instructor shall evaluate this flight.

c. Crew Requirement. IP/RAC/CC.

d. Ground Training. Per the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7, all RACs shall successfully complete an open and closed book test prior to CSIX. Upon completion of this flight, the RAC will be CH-53 NATOPS qualified in model as a Helicopter 2nd Pilot (H2P).

CSIX-191 2.0 MR,R,SCE,SCD E 1 CH-53

Goal. Evaluate systems knowledge of the CH-53 and the capability to perform maneuvers in the Core Skill Introduction phase, including high AOB maneuvers.

Requirement

Practice:
Evaluate systems knowledge of the CH-53 to include external lift systems.
Brief and demonstrate proficiency of all aircraft emergency procedures per the CH-53 NATOPS Flight Manual.
Demonstrate proficiency and the capability to perform in the Core Skill Introduction to include takeoffs, approaches, instrument procedures, emergency procedures, CALs, high AOB maneuvers, and landings.

Performance Standards. Per CH-53 NATOPS and FRS. Standardization Manual.

Prerequisite. Open and Closed book NATOPS exams.

Range Requirements. CAL/MAL site.

132. CORE SKILL BASIC. Pilots undergoing instruction in this level must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training prior to conducting NS flights. NS rules of conduct will be per T&R Program Manual. Pilots shall fly all NS events in this level under ambient light conditions of .0022 LUX or greater. A PUI is NSQ HLL (qualified to transport troops in HLL conditions) when the following flights have been completed: SFAM-202, FORM-211, CAL-222, CAL-223, CAL-224, TERF-232, TERF-233, and TAC-291. Aircrew not NSQ HLL require supervision of an NSI for all events flown with NS. Additionally, all PUIs not proficient for a particular event require the supervision of an NSI. (GTR-250 does not require an NSI if both pilots are NSQ HLL.)

1. Familiarization/Instruments (FAM/INST)

a. Purpose. To review day and night familiarization maneuvers, navigation procedures, basic instrument procedures, and introduce and review NS devices.

b. General

(1) Pilots will find familiarization maneuver descriptions in the NATOPS Manual.

(2) The NATOPS Instrument Flight Manual defines basic instrument procedures. All instrument stage flights should terminate with an instrument approach when possible.

(3) The MAWTS-1 NVD Manual and the NTRP 3-22.4-CH53 provide NS guidance.

c. Crew Requirement. FAM/INST-200,202: P/P. FAM/INST-201: P/P/CC.

d. Simulator Training. (2 Periods, 3.0 Hours).

e. Flight Training. (1 Flight, 1.5 Hours).

FAM/INST-200 1.5 R,SC S (N)

Goal. Review normal, emergency, and instrument procedures.

Requirement

Discuss:
- Basic FAM maneuvers.
- Emergency procedures.
- Operating limitations.
- Basic instrument procedures.
- Precision and non-precision approaches.
- If flown at night, discuss night lighting and use, night scan, and fixation.

Review:
- Basic FAM maneuvers.

Emergency procedures.
Operating limitations.
Basic instrument procedures.
Precision and non-precision approaches.

Performance Standards. Per CH-53 NATOPS and Instrument Flight Manual.

External Syllabus Support. WST/APT.

FAM/INST-201 1.5 R 1 CH-53 (N)

Goal. Review normal, emergency, and instrument procedures.

Requirement

Discuss:
Same as FAM/INST-200.

Review:
Same as FAM/INST-200.

Performance Standards. Same as FAM/INST-200.

Prerequisite. FAM/INST-200.

FAM/INST-202 1.5 S/A NS

Goal. Introduce the operation and capabilities of aircraft NS.

Requirement

Discuss:
CRM utilizing NS.
NS emergency procedures.
Night scan and fixation.
Aircraft lighting.
NS preflight, donning, and adjustment procedures.
ANVIS-7 Heads-Up Display (HUD).
HUD operation, limitations, switchology, functionality/image.

Introduce:
CRM utilizing NS.
NS emergency procedures.
Night scan and fixation.
Aircraft lighting.
NS preflight, donning, and adjustment procedures.
ANVIS-7 Heads-Up Display (HUD).
HUD operation, limitations, switchology, functionality/image.

Performance Standards. Demonstrate basic proficiency and knowledge of switchology and the operation of NS.

External Syllabus Support. WST/APT. If unavailable, a static aircraft is acceptable. No intent to fly.

2. Formation (FORM)

a. Purpose. To review formation and introduce tactical formation maneuvering.

b. General. Pilots may find a description of these maneuvers and formations in ANTTP 3-22.3–CH53 and the MAWTS-1 Academic Support Package.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Review tactical formation flight in ANTTP 3-22.3-CH53.

e. Flight Training. (2 Flights, 2.0 Hours).

FORM-210 1.0 R,SC 2 CH-53

Goal. Conduct day formation and introduce tactical formation maneuvering.

Requirement

Discuss:
- CRM.
- Comfort level.
- Closure rates.
- Formation maneuvers: Break turns, center turns, pinch/dig, cover, tac turns, in-place turns, split turns, and cross turns.
- Combat spread, combat cruise, and parade positions.
- Cruise Turn principles.
- Recovery from unusual attitudes.
- Loss of visual contact.
- Lost communications.
- Inadvertent IMC procedures.
- High density altitude.
- High AOB turns/aerodynamics performance.
- Inter- and intra-aircraft communications.
- Lead changes; include EMCON lead change.

Introduce:
- Inadvertent IMC breakup and rendezvous.
- Break turns, center turns, pinch/dig, cover, tac turns, in-place turns, split turns, and cross turns.
- Combat spread and combat cruise formations.

Review:
- Parade position.
- Cruise principles.
- Crossovers.
- Full COMM and no COMM lead changes.

Performance Standards. Successfully execute all TACFORM maneuvers as lead and wingman IAW ANTTP 3-22.3-CH53. Successfully execute inadvertent IMC breakup and rendezvous IAW RW TACSOP.

FORM-211 1.0 R 2 CH-53 NS

Goal. Conduct NS formation flight and navigation.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Aircraft lighting.
Night tactical formation.
Closure rate.
Recovery from unusual attitudes.
CRM.
Comfort level.
NS emergencies.
Inadvertent IMC.
Dead reckoning techniques.
Low level hazards.
N-PFPS Mission Planning.
HNVS considerations.

Introduce:
NS formation flight.
NS navigation to include GPS and HNVS checkpoint identification.

Review:
Combat Spread/Combat Cruise Formation principles.

Performance Standards. Per ANTTP 3-22.3-CH53 and MAWTS-1 NVD Manual. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. Minimum altitude 200 feet AGL. Conduct at least 1 full COMM and 1 no COMM lead change.

Prerequisite. FORM-210.

3. Confined Area Landings (CAL)

a. Purpose. To conduct takeoffs and landings in confined/mountainous areas in the day and night environment.

b. General. Read paragraph 132.

c. Crew Requirement. CAL-220,221: P/P/CC. CAL-222,223,224: P/P/CC/AO.

d. Flight Training. (5 Flights, 7.5 Hours).

CAL-220 1.5 1 CH-53

Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain.

Requirement

Discuss:
- CRM.
- Dynamic rollover.
- Crosswind approaches.
- Limitations on landing on unprepared and uneven surfaces.
- Power settling.
- Settling with power.
- Low altitude emergencies.
- Loss of visual reference during landing and takeoff.
- Engine emergencies.
- Obstacle clearance.
- High gross weight takeoffs/landings.
- Maneuvering at high gross weight/density altitude (GW/DA).
- High AOB turns/aerodynamic performance.
- HNVS capabilities and limitations.
- LZ Diagram briefing and planning considerations.

Introduce:
- Crosswind approaches.
- Loss of visual reference during landing and takeoff.
- Obstacle takeoffs and approaches.
- High gross weight takeoffs/landings.
- LZ Diagrams.
- Landing and departures to/from a CAL/MAL site.

Review:
- Normal approaches.
- Precision approaches.
- Hover and no hover landings.
- Low altitude emergencies.

Performance Standards. Pilot shall fly pattern within 50’ and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point. Conduct a minimum of 5 landings which shall consist of a precision approach, a normal approach, a hover and a no hover landing, and a max gross weight takeoff and landing. Simulated high GW takeoffs and landings power shall be limited to 5 percent above 10’ hover power. Maintain safe obstacle clearance.

Prerequisite. FAM/INST-201.

Range Requirements. CAL/MAL site.

CAL-221 1.5 R,SC 2 CH-53

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain.

Requirement

Discuss:
- CRM.
- Obstacle clearance.

Full COMM and no COMM lead changes.
Tactical formations.
Reduced visibility section landings.
Cruise turn principles (radius of turn).
Cross cockpit landings.

Review:
CAL-220 and FORM-210.
LZ diagrams planning and briefing considerations.

Performance Standards. Pilot shall fly pattern within 50’ and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point (lead) and maintain section integrity during approach and landing (wingman). Conduct a minimum of 4 landings as lead and 4 landings as wingman. Maintain safe obstacle clearance.

Prerequisite. CAL-220 and FORM-210.

Range Requirements. CAL/MAL site.

CAL-222 1.5 1 CH-53 NS

Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS, emphasizing low work.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
CRM.
Landing zone Lighting.
Cockpit lighting.
Low altitude emergencies.
NS failures.
Inadvertent IMC procedures.
Landings with reduced visibility.
Wave-offs.
HNVS capabilities and limitations.
Electro-Optic Tactical Decision Aid (EOTDA Data).
Solar Lunar Almanac Program (SLAP).
Night fixation and scan techniques.

Introduce:
NS CALs/MALs.
NS low work.

Review:
FAM/INST-202.
CAL-220.

Performance Standards. Same as CAL-220.

Prerequisite. FAM/INST-202, CAL-220.

Range Requirements. CAL/MAL site.

CAL-223 1.5 R,SC 2 CH-53 NS

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-221 and CAL-222.

Introduce:
Section takeoffs, approaches, landings, using NS.
Capabilities and effects of all aircraft exterior lighting.

Review:
FORM-211, CAL-221, and CAL-222.

Performance Standards. Same as CAL-221.

Prerequisite. CAL-221, CAL-222, and FORM-211.

Range Requirements. CAL/MAL site.

CAL-224 1.5 R,SC 1 CH-53 NS

Goal. Introduce ANVIS-7 (HUD) and develop proficiency with CH-53 NS to include HNVS and NS.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
CRM utilizing NS.
ANVIS-7 Heads-Up Display.
Operation.
Limitations.
Switchology.
Functionality/Image.
HNVS.

Introduce:
ANVIS-7 (HUD).
NS Low Work with HUD.
NS Pattern work with HUD.

Review:
Low work.
Pattern work CAL/MAL.
FAM/INST-202 and CAL-222.

Performance Standards. Per MAWTS-1 NVD Manual. Same as FAM/INST-202 and CAL-220.

Prerequisite. CAL-222.

Range Requirements. CAL/MAL site.

4. Terrain Flight (TERF)

a. Purpose. To conduct TERF maneuvers/navigation and section maneuvering in the day and night TERF environment.

b. General

(1) TERF rules of conduct are IAW T&R Program Manual and local SOPs. A description of all TERF maneuvers can be found in ANTTP 3-22.3-CH53.

(2) Read paragraph 132.

(3) A PUI is TERF qualified when the following flights have been completed: TERF-230 and TERF-231.

(4) The supervision of a TERFI is required for all events where the PUI is not proficient.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Completion of MAWTS-1 Course Catalog Academic Support Package TERF lectures prior to commencing this stage of training.

e. Flight Training. (4 Flights, 6.0 Hours).

TERF-230 1.5 1 CH-53

Goal. Conduct single ship TERF maneuvers and navigation.

Requirement

Instructor:
TERFI required for initial qualification and re-qualification.

Discuss:
TERF profiles and maneuvers IAW ANTTP 3-22.3-CH53.
TERF rules of conduct IAW T&R Program Manual and local SOPs.
Operational power checks.
Comfort levels.
CRM.
Common terminology.
Route and checkpoint selection.
Route planning tools (N-PFPS).
Orientation techniques.

Map preparation.
Maneuvering at low altitude and high gross weight/high density altitude.
High AOB turns/aerodynamic performance.
Low altitude emergencies.
Obstacle clearance.
Aircraft navigation system.

Introduce:
Plan and brief a TERF route.
Masking/unmasking.
Quick stop.
TERF turn and roll.
Bunts.
Low level and contour profiles.
Tactical approaches.
Operational Power Checks (OPCs).
Single Point Performance Checks (SPPCs).

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Conduct at least 1 full COMM and 1 no COMM lead change.

Prerequisite. FAM/INST-201.

Range Requirements. Approved TERF maneuver area/route.

TERF-231 1.5 R,SC 2 CH-53

Goal. Conduct section TERF maneuvers and navigation.

Requirement

Instructor:
TERFI required for initial qualification and re-qualification.

Discuss:
Same items as in TERF-230, as it applies to section TERF concepts.
Tactical flight considerations per ANTTP 3-22.3-CH53.
Tactical formation maneuvers in a TERF environment per ANTTP 3-22.3-CH53.

Review:
Same as TERF-230 and FORM-210.

Performance Standards. Same as TERF-230 and incorporate tactical formation maneuvering in the navigation of the route. Perform 1 full COMM and 1 no COMM lead change.

Prerequisite. TERF-230 and FORM-210.

Range Requirements. Approved TERF maneuver area/route.

TERF-232 1.5 R,SC 1 CH-53 NS

Goal. Conduct single ship TERF maneuvers and navigation while using NS.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TERF-230.
TERF navigation considerations while using NS.
HNVS capabilities and limitations.
Cockpit lighting.
Low altitude emergencies.
NS failures.
Inadvertent IMC procedures.
Electro-Optic Tactical Decision Aid (EOTDA Data).
Solar Lunar Almanac Program (SLAP).
Night fixation and scan techniques.

Introduce:
TERF navigation flight while using NS.

Review:
TERF-230.
HNVS operations.

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems.

Prerequisite. FAM/INST-202 and TERF-230.

Range Requirements. Approved TERF maneuver area/route.

TERF-233 1.5 R,SC 2 CH-53 NS

Goal. Conduct section TERF maneuvers and navigation while utilizing NS.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TERF-231 and TERF-232.

Introduce:
Section TERF navigation while utilizing NS.

Review:
Same as TERF-231 and TERF-232.

Performance Standards. Same as TERF-232.

Prerequisite. FORM-211, TERF-231, and TERF-232.

Range Requirements. Approved TERF maneuver area/route.

5. External Loads (EXT)

a. Purpose. To develop skills necessary for external loads in confined areas and operating the aircraft near its maximum gross weight for the given ambient conditions in the day and night environment.

b. General

(1) Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual and MCRP 4-23E and Multi-Service Helicopter Sling Load Manual.

(2) Read paragraph 132.

c. Crew Requirement. P/P/CC/AO.

d. External Syllabus Support. HST.

e. Flight Training. (5 Flights, 7.5 Hours).

EXT-240 1.5 1 CH-53

Goal. Conduct single point external operations.

Requirement

Discuss:
CRM.
Comfort level.
Preflight planning to include power computations, weight and balance considerations, Operational Power Checks, and Single Point Performance Checks.
External load information/characteristics.
Hook preflight/Hook checks.
Fuel Dump procedures/Aux tank jettison.
Form F.
Power settling.
Emergency procedures during external operations.
Cargo jettison procedures.
Switchology.
Inadvertent hook release.
Pilot Induced Oscillations (PIO).
HST operation and safety brief.
Wave-off with the load.
Reduced visibility conditions.
Precision approach techniques.

Introduce:
Single point external operations to a confined area.
Compute power requirements/margin based on cockpit indications while in pickup/drop off zone.
External lift procedures.
In-flight weight and power computations.
Operational Power Checks (OPCs).
Single Point Performance Checks (SPPCs).

Performance Standards. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisite. CAL-220.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point loads.

EXT-241 1.5 R,SC 1 CH-53

Goal. Conduct dual point external operations (53E).

Requirement

Discuss:
Same as EXT-240.

Introduce:
Dual point external operations to a confined area.
External lift procedures.
In-flight weight and power computations.
Operational Power Checks (OPCs).
Single Point Performance Checks (SPPCs).
Compute power requirements/margin based on cockpit indications while in pickup/drop off zone.

Performance Standards. Execute 5 pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisite. CAL-220.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, dual point load (53E).

EXT-242 1.5 R,SC 1 CH-53

Goal. Conduct external flight in the TERF profile.

Requirement

Instructor:
TERFI required for all PUIs not proficient in this event.

Discuss:
Same as EXT-240 or EXT-241.
Terrain/obstacle clearance.
Route planning considerations.

Introduce:
TERF externals.

Review:
Single and/or dual point procedures.
TERF maneuvers.

Performance Standards. Fly within 50' and 10 kts of briefed altitude and airspeed. Maintain situational awareness with regards to load clearance and limited power considerations while conducting TERF maneuvers. Minimum of one pickup and delivery required.

Prerequisite. CAL-220, TERF-230 and EXT-240 or EXT-241.

Range Requirements. Approved CAL/MAL site. Approved TERF maneuver area/route.

External Syllabus Support. HST, single or dual point load.

EXT-243 1.5 1 CH-53 NS

Goal. Conduct NS single point external operations.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-222 and EXT-240.

Introduce:
NS single point externals to a confined area.

Review:
EXT-240 and CAL-222.

Performance Standards. Same as EXT-240.

Prerequisite. CAL-222 and EXT-240.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point load.

EXT-244 1.5 R,SC 1 CH-53 NS

Goal. Conduct NS dual point externals (53E).

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-222 and EXT-241.

Introduce:
NS dual point (53E) externals to a confined area.

Review:
Same as CAL-222 and EXT-241.

Performance Standards. Same as EXT-241.

Prerequisite. CAL-222 and EXT-241.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST, dual point load.

6. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics and on-board weapons systems to evade ground-to-air threats.

b. General. Pilots shall conduct this stage in a simulator against ground-to-air threats.

c. Crew Requirement. P/P.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for GTR, as specified in the MAWTS-1 Course Catalog, prior to commencing the flight phase.

(2) Review applicable chapters of ANTTP 3-22.3-CH53 for EW/IR countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Simulator Training. (1 Period, 1.5 Hours).

GTR-250 1.5 SC S (NS)

Goal. Introduce ground threat reactions and ASE.
Requirement

Instructor:
WTI or DMI required when the PUI is not proficient.

Discuss:
Operation of the ALE-39/47, APR-39, ALQ-157, and AAR-47.
The strengths and weaknesses of each ASE system versus ground-to-air threats.
CRM.
Different tactical EW/IR countermeasures.
Tactical maneuvering to counter the threat.
Inter- and intra-aircraft communications and standard terminology.
Threat identification and rules of engagement.
Lookout doctrine.

Introduce:
Search, acquisition, track, and missile alert signals of all applicable threat systems on APR-39/47 and AAR-47.
Tactical maneuvering and ASE employment to counter the threat.
Inter- and intra-aircraft communications and standard terminology.

Performance Standards. Effectively maneuver aircraft against various ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. MAWTS-1 DM class.

External Syllabus Support. WST/APT with operable ASE.

7. Aerial Refueling (AR) (CH-53E)

a. Purpose. To introduce AR.

b. General. Discuss and become thoroughly familiar with all AR procedures and aspects of CRM as described in the CH-53E NATOPS Manual and the NATOPS Air Refueling Manual (NAVAIR 00-8-T-110).

c. Crew Requirement. P/P.

d. Ground Training. Pilots shall consult the MAWTS-1 Course Catalog for the recommended lectures in the Academic Support Package applicable to this stage of flight, in addition to the MAWTS-1 NVD Manual and ANTTP 3-22.3-CH53.

e. Simulator Training. (1 Period, 1.0 Hour).

AR-260 1.0 SC S (NS)

Goal. Conduct aerial refueling.

Requirement

Instructor:
Supervision of an ARI is required when PUI is not proficient.

Discuss:
CRM.
Comfort level.
Rendezvous procedures, both VMC and IMC.
Voice procedures.
Join-up procedures.
Airspeeds/altitudes.
Crossovers.
Hose response/markings.
Inadvertent disconnects.
AR emergencies.

Control inputs and tip path awareness.
Blade stall.
NATOPS AR envelope chart.

Introduce:
Rendezvous/join-up.
Observation/pre-contact/contact/refuel/disconnect positions.
Aircraft movement around the tanker.
Post AR procedures.

Performance Standards. Demonstrate the ability to perform a successful join-up and movement to the observation position. Movement to a stable pre-contact, refueling and disconnect position.

Prerequisite. Aerial refueling lecture.

External Syllabus Support. WST/APT.

8. Field Carrier Landing Practice (FCLP)

a. Purpose. To prepare for day, night, and NS carrier landings.

b. General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the appropriate CH-53 NATOPS flight manual, LHA/LHD NATOPS, and OPNAV 3710.7. FCLP-271, FCLP-272, and FCLP-273 shall be conducted to a suitable FCLP pad.

c. Crew Requirement. FCLP-270: P/P. FCLP-271: P/P/CC. FCLP-272, 273: P/P/CC/AO.

d. Ground Training. Review shipboard operations and CQ procedures contained in the appropriate NATOPS Flight Manual, LHA/ LHD NATOPS, and OPNAV 3710.7 prior to commencing this stage of training.

e. Simulator Training. (1 Period, 1.0 Hour).

f. Flight Training. (3 Flights, 3.0 Hours).

FCLP-270 1.0 SC S (N)

Goal. Conduct day, night and NS simulated shipboard flight

operations.

Requirement

Discuss:
CRM.
Terminology.
Shipboard day and night landing patterns.
Shipboard instrument procedures.
Shipboard emergency procedures.
Blade/pylon fold procedures.

Introduce:
The LHA and LHD day and night VFR landing patterns.
TACAN and CCA approaches in IMC or night conditions.

Performance Standards. Conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC.

Prerequisite. Shipboard qualification lecture.

External Syllabus Support. WST/APT.

FCLP-271 1.0 SC 1 CH-53

Goal. Conduct day FCLP.

Requirement

Discuss:
Same as FCLP-270.

Introduce:
FCLPs.

Review:
FCLP-270.

Performance Standards. Pilot shall fly pattern within 50’ and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. Shipboard qualification lecture. CAL-220 and FCLP-270.

Range Requirements. FCLP pad.

External Syllabus Support. FCLP pad.

FCLP-272 1.0 SC 1 CH-53 N*

Goal. Conduct night, unaided FCLP.

Requirement

Discuss:
Same as FCLP-270.
Scan techniques.
Aircraft/deck lighting.

Introduce:
Unaided FCLP.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. FCLP-271.

Range Requirements. FCLP pad.

External Syllabus Support. FCLP pad.

FCLP-273 1.0 R,SC 1 CH-53 NS

Goal. Conduct NS FCLPs.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as FCLP-272.
NS landing techniques.
NS emergencies.

Introduce:
NS FCLP.

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. FCLP-271. If conducted under HLL conditions: CAL-222. If conducted under LLL conditions: CAL-320.

Range Requirements. FCLP pad.

External Syllabus Support. FCLP pad.

9. Aerial Gunnery (AG)

a. Purpose. To introduce day AG employment.

b. General. Discuss and become familiar with all aspects of AG as described in the MAWTS-1 Aerial Gunnery Manual, ASP Fundamentals of AG, the ANTTP 3-22.3-CH53, and appropriate NATOPS flight manual.

c. Crew Requirements. P/P/CC/AGO(AGUI, AGI)/TG (TGUI, TGI).

d. Ground Training. None.

e. Flight Training. (1 Flight, 1.0 Hours).

AG-280 1.0 R,SC 1 CH-53

Goal. Introduce day weapons employment.

Requirement

Discuss:
Door gun and tail gun nomenclature, capabilities, and limitations.
Types of ammunition and ballistic effects.
Safety considerations, malfunction procedures, jams, and hung ordnance procedures.
Range procedures and course rules.
Weapons conditions, fire control voice commands, and fire discipline.
Range estimation and target engagement procedures.
Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53Firing in approach, landing, and departure profiles.
Landing profile with tail gun installed.

Introduce:
Ordnance loading, weapons preflight and operations, and post-flight.
Implementation of fire control voice commands, and fire discipline.
Range estimation and target engagement.
Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53.
Landing profile with tail gun installed.

Performance Standards. Demonstrate effective fire control voice commands and fire discipline. Maintain briefed flight profiles IAW ANTTP 3-22.3-CH53. Demonstrate appropriate target engagement IAW ANTTP 3-22.3-CH53.

Prerequisite. Read MAWTS-1 Aerial Gunnery Manual, ANTTP 3-22.3-CH53 Fundamentals of Aerial Gunnery chapter, ASP Fundamentals of AG, and appropriate NATOPS flight manual.

Ordnance. Door guns, tail gun, and ammunition.

Range Requirements. Live fire AG range (.50 cal).

10. Tactics (TAC)

a. Purpose. To plan, brief, execute and debrief a tactical mission in a low threat environment.

b. General

(1) The PUI will assist in the planning, briefing, and debriefing of each flight. Pilots shall use the ANTTP 3-22.3-CH53 and RW TACSOP as source

documents for planning and developing proficiency in planning, briefing, execution, and debriefing.

(2) TAC events will be flown with static .50 cals whenever practical.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Consult the MAWTS-1 Course Catalog for the recommended Academic Support Package lectures applicable to this stage of training.

e. Flight Training. (2 Flights, 4.0 Hours).

TAC-290 2.0 A/S 2 CH-53

Goal. Conduct assault support tactical missions in a low threat environment.

Requirement

Discuss:
- CRM.
- Planning based on METT-TSL.
- Route planning.
- Objective area planning.
- Air and ground unit coordination.
- Marine Aviation Command and Control System (MACCS).
- Emissions control (EMCON), Transmission Security (TRANSEC), and Communication Security (COMSEC).
- L-Hour (event versus time-driven).
- ASE considerations.

Introduce:
- Tactical mission analysis, planning, briefing, execution, and debriefing in support of assigned tasks.
- Objective area planning.
- MACCS.
- EMCON, TRANSEC, and COMSEC.
- Mission smartpack.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within $\pm$ 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TERF-231, CAL-221, and GTR-250 (AG-280 if .50 cal to be employed).

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

TAC-291 2.0 R,SC 2 CH-53 NS

Goal. Conduct assault support tactical missions in a low threat environment at night.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TAC-290.
NS planning, briefing, and execution considerations

Introduce:
NS planning, briefing, and execution considerations.

Review:
TAC-290.
HNVS and HUD operations.

Performance Standards. Same as TAC-290.

Prerequisite. CAL-223, TERF-233, and TAC-290 (AG-380 if .50 cal to be employed).

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

133. CORE SKILL ADVANCED. Pilots undergoing instruction in this phase must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training prior to conducting NS flights. NS rules of conduct will be per T&R Program Manual; i.e., the PUI may begin the LLL syllabus when designated NSQ HLL and EXT-243 and EXT-244 complete. A PUI is NSQ LLL (qualified to transport troops in all light level conditions) at the completion of the following flights: CAL-320, CAL-321, CAL-322, TERF-330, TERF-331, and TAC-391. Pilots shall fly the above listed flights and EXT-342 under ambient light conditions of less than .0022 LUX. Aircrew not NSQ LLL require supervision of an NSI for all events flown with NS. Additionally, all PUIs not proficient for a particular NS event require the supervision of an NSI. (GTR-350 does not require an NSI if both pilots are NSQ for the appropriate light level.)

1. Confined Area Landings (CAL)

a. Purpose. To conduct CALs in Low Light Level (LLL) conditions to a CAL/MAL site.

b. General

(1) Refer to the appropriate CH-53 NATOPS Flight Manual, ANTTP 3-22.3-CH-53, RW TACSOP, and MAWTS-1 NVD Manual for various NS considerations.

(2) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. Prerequisite. PUI must be NSQ HLL, EXT-243, and EXT-243 complete.

e. Flight Training. (3 Flights, 4.5 Hours).

CAL-320 1.5 1 CH-53 NS

Goal. Conduct single ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS under LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-222.
LLL planning considerations.

Introduce:
Same as CAL-222 under LLL conditions.

Performance Standards. Same as CAL-220.

Prerequisite. NSQ HLL, EXT-243, and EXT-244.

Range Requirements. CAL/MAL site.

CAL-321 1.5 R,SC 2 CH-53 NS

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS under LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-223.
LLL planning considerations.

Introduce:
Same as CAL-223 under LLL conditions.

Performance Standards. Same as CAL-221.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

CAL-322 1.5 R,SC 1 CH-53 NS

Goal. Introduce ANVIS-7 (HUD) and develop proficiency with CH-53 NS to include HNVS and NS under LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as CAL-224 under LLL conditions.

Introduce:
Same as CAL-224 under LLL conditions.

Review:
Low work.
Pattern work CAL/MAL.
FAM/INST-202 and CAL-222.
Performance Standards. Per MAWTS-1 NVD Manual. Same as FAM/INST-202 and CAL-220.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

2. Terrain Flight (TERF)

a. Purpose. To conduct TERF maneuvers/navigation and section maneuvering in the LLL TERF environment.

b. General

(1) TERF rules of conduct are IAW T&R Program Manual and local SOPs. A description of all TERF maneuvers can be found in ANTTP 3-22.3-CH53.

(2) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Completion of MAWTS-1 Course Catalog Academic Support Package prior to commencing this stage of training.

e. Flight Training. (2 Flights, 3.0 Hours).

TERF-330 1.5 1 CH-53 NS

Goal. Conduct single ship TERF maneuvers and navigation under LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TERF-232.
LLL planning considerations.

Introduce:
Same as TERF-232 under LLL conditions.

Performance Standards. Same as TERF-232.

Prerequisite. TAC-291, EXT-243/244.

Range Requirements. Approved TERF maneuver area/route.

TERF-331 1.5 R,SC 2 CH-53 NS

Goal. Conduct section TERF maneuvers and navigation under LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TERF-231 and TERF-232.
LLL planning considerations.

Introduce:
Same as TERF-233 under LLL conditions.

Review:
Same as TERF-231 and TERF-232.

Performance Standards. Same as TERF-232.

Prerequisite. TERF-330.

Range Requirements. TERF maneuver area/route.

3. External Loads (EXT)

a. Purpose. To develop skills necessary for external operations in confined areas and operating the aircraft near its maximum gross weight for the given ambient conditions in the night environment.

b. General

(1) Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual and MCRP 4-23E and Multi-Service Helicopter

Sling Load Manual. Initial qualification, re-qualification, and subsequent flights may be single or dual point, dual point preferred.

(2) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. External Syllabus Support. HST and a single point or dual point load.

e. Simulator Training. (1 Period, 1.5 Hours).

f. Flight Training. (3 Flights, 4.5 Hours).

EXT-340 1.5 SC S CH-53 (NS)

Goal. Conduct heavy external lift operations.

Requirement

Introduce:
Techniques for heavy external lift operations.
Emergency procedures during external operations.

Review:
EXT-240.

Performance Standards. Compute power requirements/margin based on cockpit indications while in pickup/drop off zone. Same as EXT-240 while operating in conditions approaching maximum aircraft performance within the boundaries of existing safety considerations.

External Syllabus Support. WST/APT.

EXT-341 1.5 R,SC 1 CH-53 (NS)

Goal. Conduct heavy external lift operations.

Requirement

Discuss:
Same as EXT-240.
Techniques for heavy external lift operations.
Minimum power margin based on operating environment.

Introduce:
Techniques for heavy external lift operations.
Emergency procedures during external operations.

Review:
EXT-240.

Performance Standards. Compute power requirements/margin based on cockpit indications while in pickup/drop off zone. Same as EXT-240 while operating in conditions approaching

maximum aircraft performance within the boundaries of existing safety considerations.

Prerequisite. EXT-340, EXT-240 (for single point operations) or EXT-241 (for dual point operations).

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and single or dual point load.

EXT-342 1.5 R,SC 1 CH-53 NS

Goal. Conduct LLL NS external operations, dual point preferred.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.
Discuss:
Same as EXT-242 (single point) and EXT-243 (dual point).

Introduce:
LLL NS externals.

Review:
EXT-241 (single point) and EXT-242 (dual point).

Performance Standards. Execute 5 pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and single or dual point load.

EXT-343 1.5 R,SC 1 CH-53 NS

Goal. Conduct external flight in the TERF profile in the night environment.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as EXT-240 or EXT-241.
Terrain/obstacle clearance.
Route planning considerations.
Light level planning considerations.

Introduce:
TERF externals in the night environment.

Review:
Single and/or dual point procedures.
TERF maneuvers.

Performance Standards. Same as EXT-242.

Prerequisite. If conducted under HLL conditions: TERF-232, EXT-242 (if single point), and EXT-243 (if dual point). If conducted under LLL conditions: TERF-330 and EXT-342.

Range Requirements. CAL/MAL site. TERF maneuver area/route.

External Syllabus Support. HST, single or dual point load.

4. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using ASE and tactics to defeat non-radar ground-based threats.

b. General. Pilots shall conduct this stage against non-radar ground-based threats. Utilization of a range with threat simulation systems (e.g., Smokey SAMs, target lights, handheld pyrotechnics, and AAR-47 stimulator) will greatly enhance aircrew training.

c. Crew Requirement. P/P/CC/AG.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for GTR, as specified in the MAWTS-1 Course Catalog, prior to commencing the flight phase.

(2) Review applicable chapters of ANTTP 3-22.3-CH53 for non-radar IR and AAA countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

c. Flight Training. (1 Flight, 1.0 Hours).

GTR-350 1.0 R,SC 2 CH-53 (NS)

Goal. Conduct ground threat reactions and ASE familiarization.

Requirement

Instructor:
WTI or DMI required when the PUI is not proficient. NSI required for if utilizing NS when both pilots are not NSQ for the appropriate light level.

Discuss:
Operation of the ALE-39/47, ALQ-157, and AAR-47.
The strengths and weaknesses of each ASE system versus non-radar ground-based threats.

CRM.
Different tactical IR countermeasures.
Tactical maneuvering to counter the threat.
Inter- and intra-aircraft communications and standard terminology.
Threat identification and rules of engagement.
Lookout doctrine.

Introduce:
Tactical maneuvering and ASE employment to counter the threat.
Inter- and intra-aircraft communications and standard terminology.

Review:
GTR-250.
TACFORM maneuvering.
TERF.

Performance Standards. Effectively maneuver aircraft against various non-radar ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. MAWTS-1 GTR class. TERF-231 and GTR-250. If flown under HLL conditions, TERF-233. If flown under LLL conditions, TERF-331.

Ordnance. 60 flares.

Range Requirements. Expendable capable range. Approved TERF maneuver area/route.

External Syllabus Support. Ground-based non-radar threat simulators (e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, target lights).

5. Aerial Refueling (AR) (CH-53E)

a. Purpose. To develop proficiency in AR.

b. General

(1) Discuss and become thoroughly familiar with all aspects of CRM as described in the CH-53E NATOPS Manuals and the NATOPS Air Refueling Manual (NAVAIR 00-8-T-110). Successful completion of each flight requires a minimum of 3 contacts with demonstrated proficiency and movement to the refueling position.

(2) The supervision of an ARI is required for all events where the PUI is not proficient. AR-362 requires the supervision of an NSI if both pilots are not NSQ for the appropriate light level.

c. Crew Requirement. AR-360, 361: P/P/CC. AR-362: P/P/CC/AO.

d. Ground Training. Pilots shall consult the MAWTS-1 Course Catalog for the recommended lectures in the Academic Support Package applicable to

this stage of flight, in addition to the MAWTS-1 NVD Manual and ANTTP 3-22.3-CH53.

e. Flight Training. (3 Flights, 3.0 Hours).

AR-360 1.0 SC 1 CH-53E

Goal. Conduct day AR.

Requirement

Instructor:
ARI required for initial qualification and re-qualification.

Discuss:
Same as AR-260.

Review:
AR-260.

Performance Standards. Demonstrate the ability to perform a successful join-up and movement to the observation position; movement to a stable pre-contact, refueling and disconnect position. Initial qualification shall be performed right seat, left hose.

Prerequisite. AR-260.

Range Requirements. Special use airspace.

External Syllabus Support. 1 KC-130 tanker.

AR-361 1.0 R,SC 1 CH-53E

Goal. Conduct day AR.

Requirement

Instructor:
ARI required for initial qualification and re-qualification.

Discuss:
Same as AR-260.
Types of tanker rendezvous (tanker orbit, running rendezvous, etc.).

Introduce:
Refueling from both sides of the tanker if available.
No COMM procedures.

Review:
AR-360.

Performance Standards. Same as AR-360. Demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisite. AR-360.

Range Requirements. Special use airspace.

External Syllabus Support. 1 KC-130 tanker.

AR-362 1.0 R,SC 1 CH-53E NS

Goal. Conduct night AR with NS.

Requirement

Instructor:
ARI required for initial qualification and re-qualification. ARI must be an NSI if PUI is not NSQ for appropriate light level.

Discuss:
Same as AR-260.
NS/HNVS considerations.
Light Level Planning considerations.
Night movement around tanker.
Multiple receiver conduct at night.
Closure rates.
Depth perception.
Receiver/tanker lighting.
Visual illusions.
Inadvertent IMC.
EMCON visual signals.
NS emergencies.

Introduce:
NS AR.

Performance Standards. Same as AR-360. For initial qualification, demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisite. AR-361.

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 tanker.

6. Aerial Gunnery (AG)

a. Purpose. To introduce NS AG employment.

b. General. Discuss and become familiar with all aspects of AG as described in the MAWTS-1 Aerial Gunnery Manual, ASP Fundamentals of Aerial Gunnery, the ANTTP 3-22.3-CH53, and the appropriate NATOPS flight manual.

c. Crew Requirements. P/P/CC/AGO(AGUI, AGI)/TG (TGUI, TGI).

d. Ground Training. Same as AG-280.

e. Flight Training. (1 Flight, 1.0 Hour).

AG-380 1.0 R,SC 1 CH-53 NS

Goal. To introduce NS AG employment.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as AG-280.
Night adaptation and muzzle flash awareness.
Laser operations and safety per the ANTTP 3-22.3-CH53.

Introduce:
Same as AG-280 in night environment.

Prerequisite. AG-280.

Performance Standards. Same as AG-280.

Ordnance. Minimum of 2 .50 Cal (TG optional) and .50 CAL ammo.

Range Requirements. Live fire AG range (.50 cal). Laser-capable range.

7. Tactics (TAC)

a. Purpose. To plan, brief, execute and debrief a tactical mission in a medium threat environment, using escort aircraft, if available.

b. General

(1) The PUI shall plan, brief, and debrief each flight. To the greatest extent possible, incorporate the employment of escort aircraft (fixed or rotary-wing), ALE-39/47, AAR-47, HNVS and HUD, APR-39, the .50 caliber machine gun, and use of NBC equipment as required. Pilots shall use the ANTTP 3-22.3-CH53 and RW TACSOP as source documents for planning and developing proficiency in planning, briefing, execution, and debriefing.

(2) TAC sorties will be flown with .50 cals whenever practical.

(3) Read paragraph 133.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Consult the MAWTS-1 Course Catalog for the recommended Academic Support Package lectures applicable to this stage of training.

e. Flight Training. (2 Flights, 4.0 Hours).

TAC-390 2.0 R,SC 2+ ACFT

Goal. Conduct assault support tactical missions in a medium threat environment.

Requirement

Discuss:
Same as TAC-290.
Flight leadership.
ITG considerations.
Embark and debark of troops and equipment.
Sectors of fire.
Escort considerations.
Fire Support Coordination considerations.
Weapons preflight, control, and employment.

Review:
TAC-290.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within ± 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-290 (AG-280 if .50 cal to be employed).

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

TAC-391 2.0 R,SC 2+ ACFT NS

Goal. Conduct assault support tactical missions in a medium threat environment during LLL conditions.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TAC-291 and TAC-390.
LLL planning considerations.
Effects of ordnance delivery on NS.

Review:
TAC-291 and TAC-390.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within ± 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. CAL-321, TERF-331, and TAC-390 (AG-380 if .50 cal to be employed).

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

134. CORE SKILL PLUS

1. Helicopter Insertion & Extraction Techniques (HIE)

a. Purpose. To introduce HIE methods required in executing special operations.

b. General. The pilots shall conduct a brief with the supported unit.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Aerial delivery, fast rope, rappel, SPIE rig, and helocast training lectures from MAWTS-1 Academic Support Package and ANTTP 3-22.3-CH53, as appropriate.

e. Flight Training. (3 Flights, 3.0 Hours).

HIE-400 1.0 R,SC 1 CH-53 (NS)

Goal. Conduct tactical insertion and/or extraction of a ground force via fast rope, rappelling, or SPIE.

Requirement

Discuss:
CRM.
Safety precautions.
Signals/communications with HRST master.
Training master procedures.
Rescue Hoist procedures and types of operations.
Obstacle clearance.
Precision hover/hover performance.
Emergency procedures to include NS emergencies if flown at night.

Introduce:
Techniques for inserting personnel by fastrope, rappelling, or SPIE.
Signals/communications with HRST master.

Precision hover.

Performance Standards. Execute approach and hover within ± 5′ of intended altitude and within 2 meters of intended spot.

Prerequisite. CAL-220 for day. NSQ for appropriate light level.

Range Requirements. Suitable CAL/MAL site.

External Syllabus Support. HRST Master and ground safety personnel.

HIE-401 1.0 R,SC 1 CH-53

Goal. Conduct tactical insertion of a ground force via helocast.

Requirement

Discuss:
- CRM.
- Safety precautions.
- Training master procedures.
- Signals/communications with jump master.
- Obstacle clearance.
- Precision taxi techniques over water.
- Emergency procedures to include NS emergencies.
- Vertigo and visual illusions.

Introduce:
- Techniques for inserting personnel by helocast.
- Signals/communications with jump master.
- Precision taxi.

Performance Standards. Execute approach/hover within ± 5 ft/± 3 kts of intended altitude and ground speed.

Prerequisite. TERF qualified.

Range Requirements. Approved helocast drop zone.

External Syllabus Support. Jump master, safety boat and safety personnel.

HIE-402 1.0 R,SC 1 CH-53 (NS)

Goal. Conduct tactical insertion via para ops.

Requirement

Discuss:
- CRM.
- Safety precautions.
- Signals/communications with jump master.
- Training master procedures.
- Obstacle clearance.

Emergency procedures to include NS emergencies.

Introduce:
Techniques for inserting personnel by para ops.
Signals/communications with jump master.

Performance Standards. Fly within ± 50' of designated altitude and ± 5 kts of designated airspeed.

Prerequisite. CAL-220 for day. NSQ for appropriate light level.

Range Requirements. Approved drop zone.

External Syllabus Support. Jump master and ground safety personnel.

2. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using ASE and tactics to defeat radar ground-based threats.

b. General. Pilots shall conduct this stage against an electromagnetic threat simulator. Use of the APR-39 and ALE-39/47 trainer or simulator will aid in preparing aircrew prior to flight.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for GTR specified in the MAWTS-1 Course Catalog prior to commencing the flight phase.

(2) Review applicable chapters of ANTTP 3-22.1-CH53 Tactical Manual, ANTTP 3-22.3-CH-53 for EW countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Flight Training. (1 Flight, 1.0 Hour).

GTR-450 1.0 SC,R 2 CH-53 (NS)

Goal. Conduct GTR while employing ASE against various radar ground-based threats.

Requirement

Instructor:
DMI for initial qualification and re-qualification. NSI if flown at night and both pilots are not NSQ for the appropriate light level.

Discuss:
Operations of the ALE-39/47, APR-39, ALQ-157, AAR-47, and expendables.
The strengths and weaknesses of each ASE system versus ground-to-air and air-to-air threats.

CRM.
Section tactics and tactical maneuvering against ground-based threat systems.
Use of radar horizon, ground clutter, radar resolution cells, and radar masking techniques.

Introduce:
Various threat signatures concentrating on threat recognition and detection.
Surface fires evasive maneuvers coordinated with the dispensing of chaff and flares.
Section maneuvering against radar guided threats on an EW range or with an emitter.
Section threat avoidance, masking and the use of chaff and flares.

Performance Standards. Effectively maneuver aircraft against various radar ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231 proficient, GTR-250, and MAWTS-1 GTR class.

Ordnance. 30 chaff and 30 flares.

Range Requirements: EW range or emitter with threat systems to include electromagnetic and ground based threat simulation. Emitter should include search, acquisition, and track capabilities.

External Syllabus Support. Emitter with various threat system simulation.

3. Defensive Measures (DM)

a. Purpose. To develop proficiency in evading enemy air threats incorporating ASE in a medium threat environment. Upon completion of this stage, the pilot will be able to effectively maneuver to evade, in a multi-plane flight, low altitude air-to-air threats.

b. General. Pilots shall conduct this stage against Fixed Wing (FW) and Rotary Wing (RW) threats. Aggressor aircraft shall simulate enemy aircraft capabilities to the max extent possible.

(1) Pilots should use simulators in conjunction with classroom instruction to the maximum extent possible.

(2) PUI is DM qualified upon completion of DM-451 and DM-452.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training

(1) Pilots shall complete the MAWTS-1 academic syllabus for DM as specified in the MAWTS-1 Course Catalog prior to commencing the flight phase.

(2) Review applicable chapters of ANTTP 3-22.3-CH53 for DM countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Flight Training. (2 Flights, 2.0 Hours).

DM-451 1.0 R,SC 2 CH-53

Goal. Conduct section DM against a rotary wing aggressor.

Requirement

Instructor:
DMI required for initial qualification and re-qualification.

Discuss:
CRM.
Lookout doctrine.
Situational awareness.
Adversary aircraft parameters.
Adversary weapons envelopes.
Mutual support.
Section tactical maneuvers.
Five axioms of survival.
Free and engaged roles and responsibilities.

Introduce:
Section tactical maneuvers in response to a threat helicopter.

Performance Standards. Effectively maneuver aircraft against various rotary wing threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231 proficient and MAWTS-1 DM class.

Ordnance. 60 flares.

Range Requirements. Approved TERF maneuver area.

External Syllabus Support. 1 helicopter to serve as adversary aircraft, preferably an attack helicopter.

DM-452 1.0 R,SC 2 CH-53

Goal. Conduct section DM against a fixed wing aggressor.

Requirement

Instructor:
DMI required for initial qualification and re-qualification.

Discuss:
CRM.

Lookout doctrine.
Situational awareness.
Adversary aircraft parameters.
Adversary weapons envelopes.
Mutual support.
Section tactical maneuvers.
Five axioms of survival.
Free and engaged roles and responsibilities.

Introduce:
Section tactical maneuvers in response to a fixed wing aircraft.

Performance Standards. Effectively maneuver aircraft against various fixed wing threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231 proficient and MAWTS-1 DM class.

Ordnance. 60 flares.

External Syllabus Support. 1 FW aircraft to serve as an aggressor.

3. Nuclear, Biological, and Chemical (NBC)

a. Purpose. To conduct flight operations while wearing NBC protective equipment.

b. General. For the safe execution of initial NBC flights, one pilot and one air crewman shall remain unmasked.

c. Crew Requirement. P/P/CC.

d. Ground Training

(1) Discuss wearing of the NBC defense suit, mask, hood, gloves and boots. Introduce proper maintenance and serviceability checks on equipment, emphasizing donning of equipment.

(2) Discuss physiological factors of flying with NBC protective equipment.

e. Flight Training. (1 Flight, 1.0 Hour).

NBC-460 1.0 R,SC 1 CH-53 (NS)

Goal. Conduct flight in a simulated NBC environment.

Requirement

Instructor:
NSI required for initial qualification and re-qualification if flown at night and both pilots are not NSQ for the appropriate light level.

Discuss:
CRM.
Comfort level.
Wearing of NBC equipment in the aircraft.
Distortion of vision.
Communications.
Proper use of NBC defensive equipment.
NS concerns with NBC equipment.

Introduce:
Taxi, low work, pattern work.
Confined area landings.
Communications.

Performance Standards. Adequately taxi, hover, and fly while wearing NBC gear. Communicate effectively while wearing NBC gear.

Prerequisite. CAL-220 for day. CAL-222 for HLL. CAL-320 for LLL.

Range Requirements. CAL/MAL site.

4. Carrier Qualification (CQ)

a. Purpose. To qualify pilots in day, night and NS flight operations from a helicopter capable ship.

b. General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the appropriate NATOPS Flight Manual, NWP-42, LHA/LHD NATOPS, and OPNAVINST 3710.7. Each initial instructional flight requires a minimum of five takeoffs and landings; additional takeoffs and landings as required to demonstrate proficiency.

c. Crew Requirement. CQ-470: P/P/CC. AO required for CQ-471, CQ-472.

d. Prerequisites. Pilots should complete the appropriate FCLP flight prior to flying the similar CQ flight. CQ-472 requires a designated NSI for initial qualification and re-qualification.

e. Ground Training. Review shipboard operations and CQ procedures as contained in the appropriate NATOPS Flight Manual, NWP-42, LHA/LPH/LHD NATOPS and OPNAVINST 3710.7 prior to commencing this stage.

f. Flight Training. (3 Flights, 4.5 Hours).

CQ-470 1.5 R,SC 1 CH-53

Goal. Introduce day CQs.

Requirement

Discuss:
CRM.
Comfort level.
Feet wet/landing checklist.

Closure rate.
Wind envelopes.
Aircraft lighting procedures.
Deck markings.
LSE signals.
Voice procedures/Lost communication procedures.
Shipboard landing patterns.
Shipboard holding patterns.
Shipboard instrument patterns.
Shipboard emergencies.
Air space control in the shipboard environment.

Introduce:
Day CQ.

Performance Standards. Same as FCLP-271.

Prerequisite. FCLP-271.

External Syllabus Support. Helicopter capable ship.

CQ-471 1.5 1 SC CH-53 N*

Goal. Conduct night, unaided CQs.

Requirement

Discuss:
FCLP-271 discussion items.
Spatial disorientation.
Aircraft/deck lighting.

Introduce:
Unaided night CQs.

Review:
FCLP-272.
FCLP-272.

Prerequisite. FCLP-272 and CQ-470.

External Syllabus Support. Helicopter capable ship.

CQ-472 1.5 R,SC 1 CH-53 NS

Goal. Conduct NS CQs.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
FCLP-273 discussion items.
Scan techniques.
NS aircraft/deck lighting.

NS landing techniques.
NS emergencies.

Introduce:
NS CQs.

Performance Standards. Same as FCLP-273.

Prerequisite. FCLP-273 and CQ-470.

External Syllabus Support. NS compatible helicopter capable ship.

6. Tactics (TAC)

a. Purpose. To conduct practical application exercises using skills developed throughout the syllabus. Pilots shall emphasize the integration of Marine aviation assets, threat and threat counter-tactics, and the C3 system. These exercises will include mission planning, briefing, and execution of an assault support mission in a simulated medium threat environment. The total number of aircraft, as specified, may be a dissimilar mix of aviation assets.

b. General. Pilots should use the ANTTP 3-22.3-CH53 and the RW TACSOP as a source document for planning. Pilots may conduct these flights in high or low light level conditions, if the participating pilots have the requisite NSQ designation.

c. Crew Requirement. P/P/CC/AO.

d. Ground Training. Consult the MAWTS-1 Course Catalog for the recommended lectures in the Academic Support Package applicable to this stage of flight.

e. Flight Training. (4 Flights, 10.0 Hours).

TAC-490 2.0 R,SC 3+ ACFT

Goal. Conduct integrated tactical flight leadership in a low-to-medium threat environment.

Requirement

Discuss:
Same as TAC-390.
Division tactics.
Objective area analysis.
Threat analysis and counter-tactics.
The use of escort assets emphasizing responsibilities of the air mission commander, assault flight leader, and escort flight leader.

Introduce:
Division tactics.
Use escort assets emphasizing responsibilities of the air mission commander, assault flight leader, and escort flight leader.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within + 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-390.

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

External Syllabus Support. Assault support escort aircraft if available.

TAC-491 2.0 R,SC 3+ ACFT NS

Goal. Conduct integrated tactical flight leadership in an integrated low-to-medium threat environment; use MCCRES standards as a reference for mission planning.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Same as TAC-490 and TAC-291.

Introduce:
TAC-490 while utilizing NS.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within + 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-390, TAC-291 if flown under HLL conditions, TAC-391 if flown under LLL conditions.

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route.

External Syllabus Support. Assault support escort aircraft if available.

TAC-492 2.0 R,SC 2 ACFT NS

Goal. Develop tactical flight proficiency in urban terrain operations at night per the MAWTS-1 MOUT Manual.

Requirement

Instructor:
NSI required for initial qualification and re-qualification.

Discuss:
Effects of ambient lighting on NS in an urban area.
Urban navigation.
Targeting and fire support coordination in an urban area.

Introduce:
Effects of ambient lighting on NS in an urban area.
Urban navigation.
Targeting and fire support coordination in an urban area.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating using appropriate scale maps. Demonstrate proficiency with aircraft navigation systems.

Prerequisite. TAC-390, TAC-291 if flown under HLL conditions, TAC-391 if flown under LLL conditions.

Range Requirements. CAL/MAL site in urban environment.

External Syllabus Support. Assault support escort aircraft if available.

TAC-493 4.0 R,SC 2 ACFT (NS)

Goal. Conduct a long range mission in a low-to-medium threat environment utilizing AR, TFBDS, and/or FARP/RGR.

Requirement

Instructor:
NSI required for initial qualification and re-qualification if flown at night.

Discuss:
Same as TAC-390 or TAC-391 if flown at night.
Refueling considerations.
Detailed fuel planning.
Escort/fire support coordination.
Utilization of TBFDS, FARP/RGR considerations.
Multiple tanker/receiver operations.

Introduce:
Detailed fuel planning.
Utilization of TBFDS, FARP/RGR considerations.
Multiple tanker/receiver operations if available.

Performance Standards. Plan and brief a tactical mission IAW RW TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating while using 1:250,000 and 1:50,000 scale maps. Utilize fuel from external source (TBFDS may be used). Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within ± 1 minute of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. TAC-390. TAC-291 if flown under HLL conditions. TAC-391 if flown under LLL conditions. If plan is to AR, AR-361 (day), AR-362 (NS).

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R).

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route. Special use airspace for AR.

External Syllabus Support. Assault support escort aircraft if available. KC-130 Tanker. AGS as required.

140. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. The 500 and 600 level flights do not affect CRP points.

1. CH-53D Core Skill Introduction Instructor (CSII) Training

a. Purpose. To develop qualified instructor pilots for day events using a standardized flight training program.

b. General

(1) Fly IUT flights with a designated CSII.

(2) Pilots undergoing instructor training should fly in the right seat.

(3) All IUTs shall complete every event of the IUT training syllabus.

(4) Individuals shall be TERFI and section leader designated prior to CSII designation.

(5) The MAG-24 standardization evaluator shall certify all CSIIs prior to designation. The MAG-24 standardization evaluator shall conduct an annual standardization check for all MAG CSIIs.

c. Training Objectives. All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of

training, the Pilot will be designated a CSII and is qualified to instruct CH-53D Core Skill Introduction CH-53E to D Series Conversion and Refresher events.

d. Crew Requirement. CSII/IUT/CC (AO required on EXT events).

e. Flight Training. (3 Flights, 5.5 Hours).

IUT-550 2.0 1 CH-53D

Goal. Introduce the IP brief and demonstrate standardized procedures for flight planning, preflight, and all day FAM stage maneuvers. Review basic instrument maneuvers, IFR planning, filing, and airway procedures.

Requirement

Discuss:
- CRM.
- Preflight and postflight pilot briefings.
- Cockpit procedures.
- Techniques of instruction.
- Common mistakes.
- Local course rules.
- CRM.
- IFR planning.
- Filing a DD-175.
- Airway procedures.
- Precision/non-precision approaches.

Review:
- All FAM procedures and maneuvers.
- Emergency Procedures.
- Instrument checklist.
- Attitude instrument flight.
- Standard rate climbing and descending turns.
- Recovery from unusual attitudes.
- Vertical S-1 pattern.
- Oscar pattern.

Performance Standards. Per CH-53D NATOPS and MAG-24 Standardization Manual. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction. Fly a minimum of one precision and one non-precision approach.

Prerequisites. Preflight walk-around, egress and local course rules exam.

IUT-551 2.0 1 CH-53D

Goal. Review CAL and external instruction techniques.

Requirement

Discuss:
- CRM.

Comfort level.
Single point external operations.
Load computations, preflight and in-flight.
Emergency procedures.
Aircraft limitations.

Review:
All CAL stage maneuvers.
Single point external operations.

Performance Standards. Per CH-53D NATOPS and FRS Standardization Manual. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Range Requirements. Approved CAL/MAL site.

Prerequisites. IUT-550.

External Syllabus Support. HST, single point loads.

STANX-552 1.5 E 1 CH-53D

Goal. Flight instructor standardization check.

Requirement

Discuss:
CRM.
CH-53D limitations.
Course Rules.
MAG-24 Standardization Manual.
Instruction techniques.

Performance Standards. Per CH-53D NATOPS and MAG-24 Standardization Manual. The MAG-24 standardization evaluator shall evaluate this event.

Prerequisites. Open and closed book NATOPS exam. IUT-551.

Range Requirements. Approved CAL/MAL site.

2. FRS Day and Night Unaided Instructor Training

a. Purpose. To develop qualified instructor pilots for day and night unaided events using a standardized flight training program.

b. General

(1) Fly IUT flights with a designated FRS Instructor Pilot.

(2) Pilots undergoing instructor training should fly in the right seat.

(3) All IUTs should complete every event of the IUT training syllabus.

c. Training Objectives. All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the Pilot will be designated an Instructor Pilot (IP) and is qualified to instruct all day and night unaided Core Skill Introduction events.

d. Crew Requirement. IP/IUT/CC/AO.

e. Flight Training. (7 Flights, 11.0 Hours).

FAM-553 1.5 1 CH-53E

Goal. Introduce the IP brief and demonstrate standardized procedures for flight planning, preflight, and all day FAM stage maneuvers.

Requirement

Discuss:
- CRM.
- Preflight and postflight pilot briefings.
- Cockpit procedures.
- Techniques of instruction.
- Local course rules.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction.

Prerequisites. Preflight walk-around, egress and local course rules exam.

FAM-554 1.5 1 CH-53E N*

Goal. Review all familiarization stage maneuvers at night.

Requirement

Discuss:
- CRM.
- The night unaided environment.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. IUT will perform all night familiarization stage maneuvers with emphasis on the IUT's instructional technique. Instructors shall emphasize the ability to teach, evaluate problems, and apply corrective instruction of FAM maneuvers in the unaided night environment.

INST-555 2.0 A/S 1 CH-53E (N)

Goal. Review basic instrument maneuvers, IFR planning, filing, and airway procedures.

Requirement

Discuss:
- CRM.
- IFR planning.
- Filing a DD-175.
- Airway procedures.
- Precision/non-precision approaches.

Review:
- Instrument checklist.
- Attitude instrument flight.
- Standard rate climbing and descending turns.
- Recovery from unusual attitudes.
- Vertical S-1 pattern.
- Oscar pattern.
- Precision and non-precision approaches.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

CAL-556 1.5 1 CH-53E

Goal. Review CAL instruction techniques.
Requirement

Discuss:
- CRM.
- Comfort level.

Review:
- All CAL stage maneuvers.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Range Requirements. CAL/MAL site.

FORM-557 1.5 2 CH-53E

Goal. Review formation instructional techniques and formation stage maneuvers emphasizing closure rates and radius of turn.

Requirement

Discuss:
- Loss of visual contact.
- Parade position.
- Cruise turn principles.
- Section CALs principles.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

EXT-558 1.5 1 CH-53E

Goal. Review external operation instructional techniques.

Requirement

Discuss:
CRM.
Single and dual point operations.
Load computations, preflight and in-flight.
Emergency procedures.
Aircraft limitations.

Review:
Single and dual point operations.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point loads.

STANX-559 1.5 E 1 CH-53E (N)

Goal. Flight instructor standardization check.

Requirement

Discuss:
CRM.
CH-53E limitations.
Course Rules.
FRS Standardization Manual.
Instruction techniques.

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

141. INSTRUCTOR EVENTS

1. There are 6 graduate level courses that qualify instructors for specific portions of the T&R syllabus. These courses are as follows:

a. Weapons and Tactics Instructor (WTI).

b. NS Instructor (NSI).

c. NS Familiarization Instructor (NSFI).

d. Aerial Refueling Instructor (ARI).

e. Terrain Flight Instructor (TERFI).

f. Defensive Measures Instructor (DMI).

2. The MAWTS-1 Course Catalog contains the POIs for the above courses and the appropriate training codes. The community considers each particular stage of the T&R syllabus sufficient to maintain proficiency as an instructor.

3. NS Familiarization Instructor Training

a. Purpose. To develop qualified instructor pilots for Night Vision Goggle events using a standardized flight training program.

b. General

(1) Fly IUT flights with a designated NSI or MAWTS-1 Instructor.

(2) Pilots undergoing instructor training should fly in the right seat.

(3) All IUTs shall complete every event of the IUT training syllabus.

c. Training Objectives

(1) All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the pilot will be designated a NSFI and is qualified to instruct all Night Vision Goggle Combat Capable HLL events.

(2) The MAWTS-1 Course Catalog contains the prerequisites and course training requirements for this stage of training.

d. Crew Requirement. IP/IUT/CC/AO.

e. Flight Training. (4 Flights, 4.0 Hours).

(1) NS-560. Refer to MAWTS-1 Course Catalog.

(2) NS-561. Refer to MAWTS-1 Course Catalog.

(3) NS-562. Refer to MAWTS-1 Course Catalog.

(4) NS-563. Refer to MAWTS-1 Course Catalog.

4. Aerial Refueling Instructor (ARI)

a. Purpose. To develop qualified instructor pilots for AR events using a standardized flight training program.

b. General

(1) Complete flights in numerical order.

(2) IUT shall demonstrate instruction and proficiency in the observation, pre-contact, refuel and disconnect positions on both sides of the tanker, from the left seat.

(3) ARIs do not require NSI designation.

(4) An ARI is required to certify additional squadron ARIs.

(5) The completion of AR-520 and AR-521 satisfies the requirements for designation as an ARI at the discretion of the CO.

c. Recertification

(1) Previously certified CH-53E ARIs returning to the CH-53E requiring Refresher or Modified Refresher training as defined in T&R Program Manual must be recertified by an ARI. Upon recertification, the designation may be made at the discretion of the squadron commanding officer. The following comprises the recertification course:

(2) The IUT must meet all prerequisites listed previously.

(3) The IUT must complete the AR-521E flight evaluated by an ARI.

d. Ground Training. The AR IUT shall present to an ARI an AR class.

e. Flight Training. (2 Flights, 2.0 Hours).

AR-520 1.0 1 CH-53E

Goal. Demonstrate AR proficiency and instructional technique in the day environment.

Requirement

Discuss:
- Instructional techniques.
- CRM.
- Comfort level.
- Decision points.
- EMCON refueling procedures.
- Long range fuel management considerations.

Review:
- AR procedures.
- AR communications.
- Emergency procedures.
- Flight briefing.
- NATOPS AR envelope chart.

Performance Standards. Demonstrate ability to maintain a stable pre-contact position (3-5 feet behind the basket). All misses controlled and smooth. Recognize and correct unsafe closure rates/control inputs. Smooth, controlled

movement from contact to refuel position. Demonstrate plugging in a turn. Demonstrate a controlled miss. IUT should plug on both sides of tanker.

Prerequisite. AR-362 and TAC-493.

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 (or USAF C-130).

AR-521 1.0 E CH-53E NS

Goal. Demonstrate NS AR proficiency and instructional technique.

Requirement

Discuss:
- Instructional techniques.
- CRM.
- Comfort level.
- Decision points.
- NS EMCON refueling procedures and signals.
- Depth perception.
- NS considerations.
- Visual illusions/Vertigo.
- Lighting configurations (Marine Corps/Joint).

Review:
- AR procedures.
- AR communications.
- Emergency procedures.
- Flight briefing.
- NATOPS AR envelope chart.

Performance Standards. Demonstrate ability to maintain a stable pre-contact position (3-5 feet behind the basket). All misses controlled and smooth. Recognize and correct unsafe closure rates/control inputs. Smooth, controlled movement from contact to refuel position. Demonstrate a controlled miss. IUT should plug on both sides of tanker.

Prerequisite. AR-520* (* Unless previously certified CH-53E ARI).

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 (or USAF C-130).

5. Terrain Flight Instructor (TERFI)

a. Purpose. To develop qualified instructor pilots for day terrain flight events using a standardized flight-training syllabus.

b. General

(1) All IUT flights shall be flown with a designated TERFI.

(2) All IUTs shall be TERF qualified and current per T&R Program Manual.

(3) All IUTs shall be section leader designated.

(4) The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus must be complete within 6 months following the first IUT flight. If 6 months have elapsed since completion of any IUT flight, that flight must be reflown prior to completing the final certification flight.

c. Recertification

(1) Previously certified CH-53 TERFIs returning to the CH-53 requiring Refresher or Modified Refresher training as defined in the T&R Program Manual must be recertified by a TERFI. Upon recertification, the designation may be made at the discretion of the squadron commanding officer. The following comprises the re-certification course:

(a) The IUT must meet all prerequisites listed previously.

(b) The IUT must successfully complete the TERFI exam administered by a TERFI.

(c) The IUT must complete the TERF-572E flight evaluated by a TERFI.

(2) Pilots certified as a TERFI in an aircraft other than the CH-53 who transition to the CH-53 as defined in T&R Program Manual must complete the entire CH-53 TERFI Certification Course previously listed.

(3) Pilots certified as a TERFI converting within the CH-53 series who do not require Refresher training as defined in the T&R Program Manual maintain their TERFI certification and may be designated a TERFI at the discretion of the squadron commanding officer.

d. Crew Requirement. IP/IUT/CC/AO.

e. IUT Ground Training

(1) The IUT will review and be capable of presenting the following classes from the MAWTS-1 Academic Support Package (ASP):

(a) Terrain Flight Introduction (U).

(b) Tactical CRM (U).

(c) IR SAM Threat to Assault Support (U).

(d) RADAR SAM Threat to Assault Support (U).

(e) AAA Threat to Assault Support (U).

(2) The academic syllabus shall be completed within 60 days prior to beginning the certification stage of the flight syllabus.

(3) The IUT will successfully complete a TERFI exam, administered by a TERFI, prior to beginning the certification stage of the flight syllabus. The minimum-passing grade for the exam is 80 percent.

(4) The IUT will present to a TERFI one of the classes listed above, as determined by the TERFI, before completing the certification stage of the flight syllabus.

f. Flight Training. (3 Flights, 4.0 Hours).

TERF-570 1.0 1 CH-53

Goal. Demonstrate the ability to conduct flight navigation in the contour and low level profiles with emphasis on instructional techniques.

Requirement

Discuss:
- CRM in a TERF environment.
- Comfort Level.
- Instructional techniques.
- Low altitude emergencies.
- Weapons and ALE/APR employment.
- Visual illusions associated with TERF flight.

Review:
- Operational power checks.
- TERF turns, rolls, contour/low level quick stops, bunts.
- Contour profiles.
- Low altitude emergencies.
- TERF navigation techniques and responsibilities.

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems.

Prerequisites. TERF-230 proficient.

Range Requirements. Approved TERF maneuver area/route. CAL/MAL site.

TERF-571 1.0 1 CH-53

Goal. Demonstrate the ability to conduct all terrain flight maneuvers while flying with an external load, emphasizing instructional techniques.

Requirement

Discuss:
- Instructional techniques.
- Crew coordination in contour flight with externals.

Voice and visual signals.
Flight envelopes of various loads.
Cargo jettison procedures.
Low altitude emergencies.
Single/dual engine operations (with & without the load).
Illusions of terrain flight.
HST requirements.

Review:
All TERF maneuvers with external loads emphasizing requirements for early initiation of maneuvers and flight profile corrections to prevent pilot induced/assisted oscillations.
Operational power checks.

Performance Standards. The IUT will conduct a minimum of 2 hookups and deliveries placing the load within 5 meters of the intended point.

Prerequisite. EXT-242 proficient.

Range Requirements. Approved TERF maneuver area/route. CAL/MAL site.

External Syllabus Support. HST.

TERF-572 1.0 E 2 CH-53

Goal. Evaluate the IUT's ability to perform and instruct all phases of terrain flight and terrain flight navigation.

Requirement

Discuss:
Crew coordination.
Instructional techniques.
Comfort level.
Illusions of terrain flight.
Low altitude emergencies.
Single/dual engine operations.
TERF/navigation techniques and responsibilities.
Weapons and ASE employment.

Review:
Operational power Checks.
All TERF maneuvers.

Performance Standards. Accomplish all TERF maneuvers without experiencing negative g’s. Maintain altitude within 25 feet on quick stop. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200’ AGL. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Conduct at least 1 full COMM and 1 no COMM lead change. The IUT will instruct tactical formation in the low level and contour profiles.

Prerequisites. Section Leader, TERF-570*, and TERF-571* (* unless previously certified CH-53 TERFI).

DMI-580-582 See MAWTS-1 Course Catalog.

NSI-590-595 See MAWTS-1 Course Catalog.

150. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS. This phase contains required evaluation and flight leadership events.

1. Evaluation (EVAL) Flights

a. Purpose. To determine qualification for designation in specific flight skills, systems knowledge and procedures.

b. General. Squadrons should use this phase of training for check flights.

c. Crew Requirements. P/P/CC/AO (as required).

d. Ground/Academic Training. Reference OPNAVINST 3710.7R, CH-53 NATOPS and Instrument Flight Manuals.

e. Flight Training. (3 Flights, 5.0 Hours).

EVAL-600 1.5 R,SC E A/S 1 CH-53 (N)

Goal. Conduct Annual NATOPS evaluation.

Requirement. As directed in the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7.

Performance Standards. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level of the pilot under evaluation.

Prerequisite. The open and closed book NATOPS examinations shall be completed prior to the commencement of the check flight.

Range Requirements. CAL/MAL site.

External Syllabus Support. WST/APT as required.

EVAL-601 1.5 E A/S 1 CH-53 (N)

Goal. Conduct annual instrument evaluation.

Requirement. As directed in the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7.

Performance Standards. Demonstrate proficiency in all phases of instrument flight and flight planning IAW the NATOPS Instrument Flight Manual.

Prerequisite. Completion of Instrument Ground School and all instrument requirements per OPNAVINST 3710.7 prior to the commencement of the check flight.

External Syllabus Support. WST/APT as required.

EVAL-602 2.0 R E 1 CH-53

Goal. Conduct a functional check pilot evaluation.

Requirement. Squadrons shall evaluate pilots for designation at the discretion of the commanding officer per the criteria in the CH-53 NATOPS Flight Manual, OPNAVINST 3710.7, 4790 Naval Aviation Maintenance Program and local SOPs. Squadrons shall base this evaluation after completion of a locally prepared syllabus.

Performance Standards. Demonstrated proficiency in all aspects of conducting Functional Check Flights (FCF) on the CH-53.

Prerequisite. As determined by squadron CO, MO, QAO, and STAN Board.

2. Flight Leadership (FL)

a. Purpose. To demonstrate requisite knowledge, leadership, airmanship, and judgment in all phases of flight commensurate with the experience level of the pilot under evaluation.

b. General

(1) Squadrons shall evaluate pilots for designations at the discretion of the commanding officer per the criteria in the CH53 NATOPS Flight Manual, OPNAV 3710.7, and local SOPs.

(2) Upon the successful completion of the check flight the new Helicopter Aircraft Commander (HAC), Section/Division/Flight Leader, or Air Mission Commander will be designated in writing by the commanding officer.

(3) Prerequisite requirements may be waived at the discretion of the commanding officer and details of the waiver will be annotated in the APR.

(4) Flight leadership codes do not chain other syllabus events. Log appropriate T&R syllabus event in addition to flight leadership code. Range, ordnance, and external support will be IAW the appropriate T&R syllabus event.

(5) Re-designation of flight leadership (E coded events) shall be in accordance with Mission and Instructor Designation/Qualifications Chapter in the T&R Program Manual.

c. Crew Requirements. P/P/CC/AO (as required).

d. Ground/Academic Training. Refer to the CH-53 NATOPS, ANTTP 3-22.3-CH53, MAWTS-1 ASP, and applicable SOPs.

e. Flight Training. (10 Flights, 13.5 Hours).

FL-610 1.5 A/S 1 CH-53

Goal. Conduct day HAC review.

Requirement. As directed in the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

Performance Standards. Demonstrate proficiency and leadership in all phases of CH-53 operations as appropriate. Emphasize NATOPS, ANTTP 3-22.3-CH53, MAG and squadron SOPs, and the Instrument Flight Manual.

Prerequisite. Core Skill Advanced complete. The Open and Closed book NATOPS examinations shall be completed prior to the commencement of the check flight.

Range Requirements. CAL/MAL site.

FL-611 1.5 1 CH-53 N

Goal. Conduct night/NS HAC review.

Requirement. Continuation of review flight to include but not limited to all practicable operations and procedures contained in the T&R syllabus as they pertain to night operations and procedures.

Performance Standards. Demonstrate proficiency and leadership in all phases of CH-53 operations as appropriate. Emphasize NATOPS, ANTTP 3-22.3-CH53, MAWTS-1 NVD Manual, MAG and squadron SOPs, and the Instrument Flight Manual.

Prerequisite. Core Skill Advanced complete.

Range Requirements. CAL/MAL site.

FL-612 2.0 R E 1 CH-53 (N)

Goal. Conduct day into night HAC check.

Requirement. As directed in the CH-53 NATOPS Flight Manual and OPNAVINST 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

Instructor:
Assistant NATOPS Instructor or NATOPS Instructor.

Performance Standards. Squadrons shall evaluate pilots for HAC designation at the discretion of the commanding officer per the criteria in the CH-53 NATOPS Flight Manual, OPNAVINST 3710.7, and local SOPs. This flight will cover all

practicable operations and procedures contained in the T&R syllabus.

Prerequisite. FL-610 and FL-611.

Ordnance. As required.

External Syllabus Support. As required.

FL-620 1.5 2 CH-53

Goal. Conduct day section leader review.

Requirement. While not limited to a tactical scenario, the SLUI shall plan, brief, lead, and debrief the mission.

Instructor:
Section Leader.

Performance Standards. Demonstrate the flight leadership necessary for effective mission accomplishment.

Prerequisite. HAC and Core Skill Advanced complete. Complete the academic syllabus for section leader as outlined in the MAWTS-1 course catalog.

FL-621 1.5 2 CH-53 NS

Goal. Conduct night section leader review.

Requirement. While not limited to a tactical scenario, the SLUI shall plan, brief, lead, and debrief the mission.

Instructor:
Section Leader.

Performance Standards. Demonstrate the flight leadership necessary for effective mission accomplishment.

Prerequisite. HAC and Core Skill Advanced complete. Complete the academic syllabus for section leader as outlined in the MAWTS-1 course catalog.

FL-622 2.0 R E 2 CH-53 (NS)

Goal. Conduct section leader check.

Requirement. SLUI shall plan, brief, lead, and debrief a day or night tactical flight.

Instructor:
Division Leader.

Performance Standards. Same as TAC-390 (TAC-391). Demonstrate the flight leadership necessary for effective mission accomplishment.

Prerequisite. FL-620 and FL-621.

FL-630 1.5 3 CH-53 (NS)

Goal. Conduct day or night division leader review.

Requirement. While not limited to a tactical scenario, the DLUI shall plan, brief, lead, and debrief the mission.

Instructor:
Division Leader.

Performance Standards. Demonstrate the flight leadership necessary for effective mission accomplishment.

Prerequisite. Section leader and Core Skill Advanced complete. Complete the academic syllabus for division leader as outlined in the MAWTS-1 course catalog.

FL-631 2.0 R E 3 CH-53 (NS)

Goal. Conduct division leader check.

Requirement. DLUI shall plan, brief, lead, and debrief a day or night tactical flight.

Instructor:
Flight Leader.

Performance Standards. Same as TAC-490 (TAC-491). Demonstrate the flight leadership necessary for effective mission accomplishment.

Prerequisite. FL-630, TAC-491, and Core Skill Advanced complete.

FL-640 2.0 R E 5+ A/C (NS)

Goal. Conduct flight leader check.

Requirement. FLUI shall plan, brief, lead, and debrief a day or night multi-element, tactical flight.

Instructor:
AMC.

Performance Standards. Same as TAC-490 (TAC-491). Demonstrate the flight leadership necessary for effective mission accomplishment.

Prerequisite. FL-630 and Core Skill Advanced complete. Complete the academic syllabus for flight leader as outlined in the MAWTS-1 course catalog.

FL-650 0.0 R E 2+ Div (NS)

Goal. Conduct Air Mission Commander (AMC) check.

Requirement. The AMC designation is a function of flight leadership, maturity and experience. The AMC shall be evaluated on his ability to integrate the 6 functions of Marine Aviation. The AMC should lead the mission from a C&C aircraft, if available.

Instructor:
AMC.

Performance Standards. Demonstrate the flight leadership necessary for effective mission accomplishment through the integration of the 6 functions of Marine Aviation.

Prerequisite. FL-640 and Core Skill Advanced complete. Complete the academic syllabus for AMC as outlined in the MAWTS-1 course catalog.

160. ORDNANCE REQUIREMENTS. Annual ordnance requirements are developed on a "per crew" basis per OPNAVNOTE 8010.

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
Chaff	0	0	90	90	90	0	110
Flares	0	0	90	210	210	0	230
.50 CAL	See Crew Chief syllabus for numbers.						

*Annual Ordnance requirements maintain aircrew proficiency.

170. MOS SYLLABUS MATRIX. These tables display specific 100 – 600 level event information such as; flight/simulator hours, refly interval, prerequisites, CRP, chaining, etc. in a table format.

STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
FAM														
FAM	100		1.0	*	S				R,SCE,SCD		0.2		SIM FAM	100
FAM	101		1.0	*	S				SCD		0.2		SIM FAM	101
FAM	102		1.0	*	S				SCD		0.2		SIM FAM	102
FAM	103		1.0	*	S				SCD		0.2		SIM FAM	103
FAM	104		1.0	*	S				SCD		0.2		SIM FAM	104
FAM	105		1.5	*	S				R,SCE		0.2		SIM FAM	105
FAM	106		1.0	*	S				R,SCE		0.2		SIM FAM	106
FAM	107		1.0	*	S		NS	NITE LAB	SCD		0.2		SIM NS FAM	107
FAM	110	1.5		*	A	1			SCE		1.0		FAM	110
FAM	111	1.5		*	A	1					1.0		FAM	111
FAM	112	1.5		*	A	1			MR		1.0		FAM	112
FAM	113	1.5		*	A	1					1.0		FAM	113
FAM	114	1.5		*	A	1			MR,R,SCE		1.0		FAM	114
FAM	115	1.5		*	A	1					1.0		FAM	115
FAM	116	1.5		*	A	1			R,SCE		1.0		FAM	116
FAM	117	1.5		*	A	1					1.0		FAM	117
FAM	118	1.5		*	A	1			R,SCE		1.0		FAM	118
FAM	119	1.5		*	A	1					1.0		FAM	119
FAM	120	1.5		*	A	1	N*		MR,R,SCE		1.0		N FAM	120
FAM	121	1.5		*	A	1	NS	107,120			1.0		NS FAM	121
FAM	122	1.5		*	A	1	NS	121	R,SCE		1.0		NS FAM	122
FAM	#123	2.0		*	A	1			SCD		0.0		FAM	
FAM	#124	2.0		*	A	1		#123	SCD		0.0		FAM	
											14.6			
INST														
INST	130		1.0	*	S				SCD		0.2		SIM INST	130
INST	131		1.0	*	S				R,SCE		0.2		SIM INST	131
INST	132		1.0	*	S				R,SCE		0.2		SIM INST	132
INST	133		1.0	*	S				SCD		0.2		SIM INST	133
INST	134		1.0	*	S						0.2		SIM INST	134
INST	135	1.5		*	A/S	1	(N)				0.5		BASIC INST	135
INST	136	1.5		*	A/S	1	(N)		MR,R,SCE		0.5		NON PREC INST	136
INST	137	1.5		*	A/S	1	(N)		R,SCE		1.0		PREC INST	137
INST	138	1.5		*	A/S	1	(N)				1.0		INST PROG CHK	138
INST	#139	2.0		*	A	1	(N)	#123,130,133	SCD		0.0		BASIC INST	
											4.0			
NAV														
NAV	140		1.0	*	S						0.2		SIM NAV	140
NAV	141	2.0		*	A	1					1.0		DAY NAV	141
NAV	142	2.0		*	A	1	NS	122			1.0		NS NAV	142
											2.2			
FORM														
FORM	150		1.0	*	S				R,SCE		0.2		SIM FORM	150
FORM	151	1.5		*	A	2			MR,R,SCE		1.0		2 A/C DAY FORM	151
FORM	152	1.5		*	A	2	NS	122,151,162, 163			1.0		2 A/C HLL FORM	152
											2.2			
# - CH-53E to CH-53D SC POI only (not applicable to Basic POI)														

CH-53 PILOT														
100 SERIES CORE SKILL INTRODUCTION														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
CAL														
CAL	160		1.0	*	S		NS	107	SCD		0.2		SIM CAL	160
CAL	161		1.5	*	A	1		#124	MR,R,SCE,SCD		1.0		1 A/C DAY CAL	161
CAL	162		1.5	*	A	2		151,161	SCD		1.0		2 A/C DAY CAL	162
CAL	163		2.0	*	A	1	NS	122,160,161			1.0		1 A/C HLL CAL	163
											3.2			
EXT														
EXT	170	1.0		*	A	1		#124,161	SCD,SCE		1.0		SINGLE PT EXT	170
EXT	171	1.0		*	A	1	NS	163,170	SCE		1.0		HLL SINGLE PT EXT	171
EXT	172	1.5		*	A	1		161	MR,R,SCE		1.0		DUAL PT EXT	172
EXT	173	1.5		*	A	1	NS	163,172	R,SCE		1.0		HLL DUAL PT EXT	173
											4.0			
TERF														
TERF	180	1.5		*	A	1		#124	R,SCE,SCD		1.0		1 A/C DAY TERF	180
TERF	181	1.5		*	A	1					1.0		1 A/C DAY TERF	181
											2.0			
REV														
REV	190	1.5		*	A	1			R,SCE,SCD		1.3		CORE SKILL INT REV	190
											1.3			
CSIX														
CSIX	191	2.0		*	A	1			MR,R,SCE,SCD	E	1.5		CORE SKILL INT CHK	191
											1.5			
CRP TOTAL FOR PHASE											**35.0**			
# - CH-53E to CH-53D SC POI only (not applicable to Basic POI)														

CH-53 PILOT															
200 SERIES CORE SKILL BASIC															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP 7566	CRP 7564	CHAINING	EVENT DESC	OLD CODE
FAM/INST															
FAM/INST	200		1.5	*	S		(N)		R,SC		0.2	0.2		SIM FLIR	200
FAM/INST	201	1.5		365	A	1	(N)	200	R		0.2	0.2		A/C FAM	201
FAM/INST	202		1.5	*	S/A		NS				0.2	0.2		NS FAM	200
											0.6	0.6			
FORM															
FORM	210	1.0		365	A	2			R,SC		0.5	0.5		2 A/C DAY FORM	210
FORM	211	1.0		180	A	2	NS	210,222	R		0.8	0.8	210	2 A/C HLL FORM	211
											1.3	1.3			
CAL															
CAL	220	1.5		365	A	1		201			0.5	0.5		1 A/C DAY CAL	220
CAL	221	1.5		365	A	2		210,220	R,SC		0.5	0.5	210,220	2 A/C DAY CAL	221
CAL	222	1.5		180	A	1	NS	202,220			1.0	1.0	220	1 A/C HLL CAL	222
CAL	223	1.5		180	A	2	NS	211,221,222	R,SC		1.0	1.0	210,211,220,221,222	2 A/C HLL CAL	223
CAL	224	1.5		*	A	1	NS	222	R,SC		0.0	0.0		HLL HUD	224
											3.0	3.0			
TERF															
TERF	230	1.5		365	A	1		201			0.5	0.5		1 A/C DAY TERF	230
TERF	231	1.5		365	A	2		210,230	R,SC		1.0	1.0	210,230	2 A/C DAY TERF	231
TERF	232	1.5		180	A	1	NS	202,230	R,SC		1.0	1.0	230	1 A/C HLL TERF	232
TERF	233	1.5		180	A	2	NS	211,231,232	R,SC		1.0	1.0	210,211,230,231,232	2 A/C HLL TERF	233
											3.5	3.5			
EXT															
EXT	240	1.5		365	A	1		220			1.0	N/A	220	SINGLE PT EXT	240
EXT	241	1.5		365	A	1		220	R,SC		1.0	2.0	220,240	DUAL PT EXT	241
EXT	242	1.5		365	A	1		220,230,240,241	R,SC		1.0	1.0	220,230,240	DAY TERF EXT	341
EXT	243	1.5		180	A	1	NS	222,240			1.0	N/A	220,222,240	HLL SINGLE PT EXT	242
EXT	244	1.5		180	A	1	NS	222,241	R,SC		1.0	2.0	220,222,240,241,243	HLL DUAL PT EXT	243
											5.0	5.0			

CH-53 PILOT															
200 SERIES CORE SKILL BASIC															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP 7566	CRP 7564	CHAINING	EVENT DESC	OLD CODE
GTR															
GTR	250		1.5	*	S		(NS)		SC		0.0	0.0		SIM GTR	250
											0.0	0.0			
AR															
AR	260		1.0	*	S		(NS)		SC		0.0	N/A		SIM AR	260
											0.0	0.0			
FCLP															
FCLP	270		1.0	*	S		(N)		SC		0.0	0.0		SIM CQ	270
FCLP	271	1.0		365	A	1		220,270	SC		0.2	0.2		DAY FCLP	471
FCLP	272	1.0		*	A	1	N*	271	SC		0.2	0.2	271	UNAIDED FCLP	472
FCLP	273	1.0		365	A	1	NS	271,222 HLL, 320 LLL	R,SC		0.2	0.2	271	NS FCLP	473
											0.6	0.6			
AG															
AG	280	1.0		*	A	1			R,SC		0.0	0.0		1 A/C AG	280
											0.0	0.0			
TAC															
TAC	290	2.0		365	A/S	2		221,231,250			0.5	0.5	210,220,221	2 A/C DAY TAC	290
TAC	291	2.0		365	A	2	NS	223,233,290	R,SC		0.5	0.5	210,211,220,221, 222,223,290	2 A/C HLL TAC	N/A
											2.0	2.0			
CRP TOTAL FOR PHASE											**15.0**	**15.0**			

CH-53 PILOT															
300 SERIES CORE SKILL ADVANCED															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP 7566	CRP 7564	CHAINING	EVENT DESC	OLD CODE
CAL															
CAL	320	1.5		180	A	1	NS	243,244, NSQ HLL			1.5	2.0	220,222	1 A/C LLL CAL	320
CAL	321	1.5		180	A	2	NS	320	R,SC		1.5	2.0	210,211,220,221, 222,223,320	2 A/C LLL CAL	321
CAL	322	1.5		*	A	1	NS	320	R,SC		0.0	0.0		LLL HUD	322
											3.0	4.0			
TERF															
TERF	330	1.5		180	A	1	NS	320			1.5	2.0	230,232,320	1 A/C LLL TERF	330
TERF	331	1.5		180	A	2	NS	330	R,SC		1.5	2.0	210,211,230,231, 232,233,330	2 A/C LLL TERF	331
											3.0	4.0			
EXT															
EXT	340		1.5	*	S		(NS)		SC		1.0	1.5		SIM EXT	N/A
EXT	341	1.5		365	A	1	(NS)	SEE EVENT	R,SC		1.0	1.5	220,240	HVY LIFT EXT	340
EXT	342	1.5		180	A	1	NS	SEE EVENT	R,SC		1.0	1.5	220,222,240,241, 243,244,320	LLL EXT	342
EXT	343	1.5		180	A	1	NS	SEE EVENT	R,SC		1.5	1.5	220,222,230,232, 240,242,243	NS TERF EXT	343
											4.5	6.0			
GTR															
GTR	350	1.0		365	A	2	(NS)	SEE EVENT	R,SC		1.0	1.0	210,230,231,250	GTR NON-RADAR	350
											1.0	1.0			
AR															
AR	360	1.0		*	A	1		260	SC		1.0	N/A		DAY AR	360
AR	361	1.0		180	A	1		360	R,SC		1.0	N/A		DAY AR	361
AR	362	1.0		180	A	1	NS	361	R,SC		1.5	N/A	361	NS AR	362
											3.5	0.0			
AG															
AG	380	1.0		*	A	1	NS	280	R,SC		1.0	1.0		NS AG	380
											1.0	1.0			
TAC															
TAC	390	2.0		365	A	2+		SEE EVENT	R,SC		2.0	2.0	210,220,221,290	MED THRT TACTICS	390
TAC	391	2.0		365	A	2+	NS	SEE EVENT	R,SC		2.0	2.0	210,211,220,221, 222,223,290,291, 320,321,390	LLL TACTICS	391
											4.0	4.0			
CRP TOTAL FOR PHASE											**20.0**	**20.0**			

CH-53 PILOT															
400 SERIES CORE PLUS															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP 7566	CRP 7564	CHAINING	EVENT DESC	OLD CODE
HIE															
HIE	400	1.0		*	A	1	(NS)	SEE EVENT	R,SC		0.1	0.1		FASTROPE	400
HIE	401	1.0		365	A	1		231	R,SC		0.1	0.1		HELOCAST	401
HIE	402	1.0		*	A	1	(NS)	SEE EVENT	R,SC		0.1	0.1		PARAOPS	402
											0.3	0.3			
GTR															
GTR	450	1.0		365	A	2	(NS)	231,250	R,SC		0.5	0.5	210,230,231	RADAR GTR	350
											0.5	0.5			
DM															
DM	451	1.0		365	A	2		231	R,SC		0.5	0.5	210,230,231	RW DM	450
DM	452	1.0		365	A	2		231	R,SC		0.5	0.5	210,230,231	FW DM	451
											1.0	1.0			
NBC															
NBC	460	1.0		*	A	1	(NS)	SEE EVENT	R,SC		0.1	0.1		NBC	460
											0.1	0.1			
CQ															
CQ	470	1.5		365	A	1		271	R,SC		0.2	0.2	271	DAY CQ	474
CQ	471	1.5		*	A	1	N*	272,470	SC		0.2	0.2	272,470	UNAIDED CQ	475
CQ	472	1.5		365	A	1	NS	SEE EVENT	R,SC		0.2	0.2	271,273,470	NS CQ	476
											0.6	0.6			
TAC															
TAC	490	2.0		365	A	3+		390	R,SC		0.5	0.5	210,220,221,290,390	DIV TACTICS	490
TAC	491	2.0		365	A	3+	NS	SEE EVENT	R,SC		1.0	1.0	210,211,220,221,222,223,290,291,390,490	NS DIV TACTICS	491
TAC	492	2.0		365	A	2	NS	SEE EVENT	R,SC		0.5	0.5	210,211,220,221,222,223,290,291,390	NS URBAN TACTICS	492
TAC	493	4.0		365	A	2	(NS)	SEE EVENT	R,SC		0.5	0.5	210,220,221,290,390	LONG RANGE TACTICS	493
											2.5	2.5			
CRP TOTAL FOR PHASE											**5.0**	**5.0**			

CH-53 PILOT																
500 SERIES INSTRUCTOR																
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP 7566	CRP 7564	CHAINING	EVENT DESC	OLD CODE
CSII (MAG-24)															
IUT	550	2.0		*	A	1					0.0	0.0		D FAM/INST	553
IUT	551	2.0		*	A	1		550			0.0	0.0		D CAL/EXT	557
STANX	552	1.5		*	A	1		551		E	0.0	0.0		D STANX	558
											0.0	0.0			
FAM	553	1.5		*	A	1					0.0	0.0		DAY FAM	553
FAM	554	1.5		*	A	1	N*				0.0	0.0		NIGHT FAM	
INST	555	2.0		*	A/S	1	(N)				0.0	0.0		INSTR	554
CAL	556	1.5		*	A	1					0.0	0.0		1 A/C CAL	555
FORM	557	1.5		*	A	2					0.0	0.0		DAY FORM	556
EXT	558	1.5		*	A	1					0.0	0.0		EXT	557
STANX	559	1.5		*	A	1	(N)			E	0.0	0.0		STANX	558
											0.0	0.0			
ARI															
AR	520	1.0		*	A	1		362,493			0.0	0.0		DAY ARI	520
AR	521	1.0		*	A	1	NS	520		E	0.0	0.0		NS ARI STANX	521
											0.0	0.0			
NSFI															
NS	560	1.0		*	A	1	NS	Course Catalog			0.0	0.0		HLL NS FAM	560
NS	561	1.0		*	A	2	NS	Course Catalog			0.0	0.0		HLL NS FORM	561
NS	562	1.0		*	A	1	NS	Course Catalog			0.0	0.0		HLL EXT	562
NS	563	1.0		*	A	1	NS	Course Catalog	R	E	0.0	0.0		NS STANX	563
											0.0	0.0			
TERFI															
TERF	570	1.0		*	A	1		230,231			0.0	0.0		1 A/C TERF	570
TERF	571	1.0		*	A	1		231,242			0.0	0.0		TERF EXT	571
TERF	572	1.0		*	A	2		570,571,SECLDR		E	0.0	0.0		TERFI STANX	572
											0.0	0.0			
DMI															
DMI	580	2.0		*	A	2		Course Catalog			0.0	0.0		2 v GRND THRT	580
DMI	581	1.0		*	A	2		Course Catalog			0.0	0.0		2 v FW/RW	581
DMI	582	1.0		*	A	2		Course Catalog	R	E	0.0	0.0		2 v FW/RW	582
											0.0	0.0			
NSI															
NSI	590		1.0	*	S/A		NS	Course Catalog			0.0	0.0		ANVIS HUD	590
NSI	591	1.0		*	A	1	NS	Course Catalog			0.0	0.0		NS LOW WORK	591
NSI	592	1.0		*	A	1	NS	Course Catalog			0.0	0.0		NS CALS/EXT	592
NSI	593	1.5		*	A	2	NS	Course Catalog			0.0	0.0		2 A/C NS TERF	593
NSI	594	1.5		*	A	2	NS	Course Catalog			0.0	0.0		2 A/C NS THRT	594
NSI	595	2.5		*	A	2	NS	Course Catalog	R	E	0.0	0.0		2 A/C NS EVAL	595
											0.0	0.0			
CRP TOTAL FOR PHASE											**0.0**	**0.0**			

CH-53 PILOT															
600 SERIES REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP 7566	CRP 7564	CHAINING	EVENT DESC	OLD CODE
EVAL															
EVAL	600	1.5		365	A/S	1	(N)		R,SC	E	0.0	0.0		ANNUAL NATOPS	600
EVAL	601	1.5		365	A/S	1	(N)			E	0.0	0.0		ANNUAL INST CHECK	601
EVAL	602	2.0		*	A	1			R	E	0.0	0.0		FCP CHECK	602
											0.0	0.0			
FLIGHT LEADER															
FL	610	1.5		*	A/S	1		Core Skills Adv			0.0	0.0		DAY HAC REVIEW	603
FL	611	1.5		*	A	1	N	Core Skills Adv			0.0	0.0		NIGHT HAC REVIEW	604
FL	612	2.0		*	A	1	(N)	610, 611	R	E	0.0	0.0		HAC CHECK	605
FL	620	1.5		*	A	2		Core Skills Adv			0.0	0.0		DAY SLUI	N/A
FL	621	1.5		*	A	2	NS	Core Skills Adv			0.0	0.0		NS SLUI	N/A
FL	622	2.0		*	A	2	(NS)	620, 621	R	E	0.0	0.0		SL CHECK	606
FL	630	1.5		*	A	3	(NS)	Core Skills Adv			0.0	0.0		DLUI	N/A
FL	631	2.0		*	A	3	(NS)	630	R	E	0.0	0.0		DL CHECK	607
FL	640	2.0		*	A	5+	(NS)	631, Core Skills Adv	R	E	0.0	0.0		FL CHECK	608
FL	650	0.0		*	A	2+	(NS)	640, Core Skills Adv	R	E	0.0	0.0		AMC CHECK	609
											0.0	0.0			
CRP TOTAL FOR PHASE											**0.0**	**0.0**			

CH-53 PILOT AIRCREW TRAINING FORM

ALL FLIGHTS	Q	U	DND	N/A
- PREPARATION				
- WEIGHT & POWER				
- SYSTEMS KNOWLEDGE				
- PRE/POST FLIGHT				
- COCKPIT PROCEDURES				
- HEADWORK				
- RADIO PROCEDURES				
- COURSE RULES				
- BASIC AIRWORK				
-EMERG. PROCEDURES				
FAMS	**Q**	**U**	**DND**	**N/A**
- TAXI				
- LOW WORK				
- NORMAL APPROACH				
- PRECISION APPRCH				
- NO HOVER LANDING				
- RUNNING T/O / LAND				
- PRACTICE AUTO				
- ENGINE OUT				
- AFCS/ SERVOS OFF				
INSTRUMENT	**Q**	**U**	**DND**	**N/A**
- INST. CHECKLIST				
- INST. TAKEOFF				
B. I. AIRWORK				
- UNUSUAL ATTITUDE				
- SID				
- PARTIAL PANEL				
- ATC PROCEDURES				
- DD-175/ICAO				
- PRECISION APPROACH				
- NON PRECISION APPROACH				
- MISSED APPROACH				
- ENROUTE NAV				
AERIAL GUNNERY	**Q**	**U**	**DND**	**N/A**
-WEAPONS KNOWLEDGE				
- VOICE COMMANDS				
FORMATION	**Q**	**U**	**DND**	**N/A**
- PARADE				
- COMBAT CRUISE				
- COMBAT SPREAD				
- CROSSOVERS				
- LEAD CHANGE				
- TACFORM MANEUVERS				
-SECTION LANDINGS				
- NS FORM				
TERF/ NAVIGATION	**Q**	**U**	**DND**	**N/A**
- ROUTE PLANNING				
- MAP PREPARATION				
- FUEL PLANNING				
- TIME DIST CHECKS				
- NAV SYSTEMS				
- IN-FLIGHT ORIENT				
- MAP INTERPRETATION				
- TERF/ AC AWARENESS				
- LOW LEVEL/CONTOUR FLIGHT				
- MASKING/UNMASKING				
- BUNT				
- ROLL				
- TERF TURN				
- TERF QUICK STOP				
NBC	**Q**	**U**	**DND**	**N/A**
-NBC ADAPTATION				

EXTERNALS	Q	U	DND	N/A
- HOOK/PENDANT PREFLIGHT				
- OP POWER CHECKS				
- PRECISION HOVER				
- PICK-UP				
- PATTERN				
- DELIVERY				
DEF MANEUVERING	**Q**	**U**	**DND**	**N/A**
-THREAT ANALYSIS				
-EVASIVE ACTIONS				
-ASE UTILIZATION				
AERIAL REFUELING	**Q**	**U**	**DND**	**N/A**
-COMM/EMCON PROCEDURES				
-JOIN-UP/RENDEZVOUS				
-PRECONTACT				
-CONTACT				
-REFUEL				
-DISCONNECT				
CQ	**Q**	**U**	**DND**	**N/A**
- SHIPBOARD PROCEDURES				
- PATTERN				
- APPROACH				
- MARSHALL PROCEDURES				
- LANDING				
- TRANS TO FWD FLIGHT				
TACTICS	**Q**	**U**	**DND**	**N/A**
- MISSION PLANNING				
- MISSION BRIEFING				
- MISSION EXECUTION				
- ACTIONS IN OBJ AREA				
- LOGISTICS				
GROUND THREAT REACTION	**Q**	**U**	**DND**	**N/A**
-THREAT CONSIDERATIONS				
- EVASIVE ACTIONS				
- EXPENDABLE EMPLOYMENT				
-ASE PROCEDURES				
- COMM PROCEDURES				
-LOOKOUT DOCTRINE				
-ADVERSARY RECOGNITION				
-MUTUAL SUPPORT				
-FLIGHT MANAGEMENT				
HELO INSERTION/EXTRACTION	**Q**	**U**	**DND**	**N/A**
-AERIAL DELIVERY				
-FAST ROPE				
-RAPPELING				
-HELOCASTING				
CALS	**Q**	**U**	**DND**	**N/A**
- LZ BRIEF				
- TAKEOFF				
- PATTERN				
- APPROACH				
- LANDING				
- TACTICAL APPROACH				
CREW COORDINATION	**Q**	**U**	**DND**	**N/A**
- DECISION MAKING				
- ASSERTIVENESS				
- MISSION ANALYSIS				
- COMMUNICATION				
- LEADERSHIP				
- ADAPTABILITY/ FLEXIBILITY				
- SITUATIONAL AWARENESS				
- CREW COMFORT				

PLANNING/ PREPARATION:

BRIEF:

EXECUTION:

Location:

Weather:

Flight:

STRENGTHS:

WEAKNESSES:

RECOMMENDATIONS:

SIGNATURE:

DATE OF FLIGHT			FLIGHT TIME	
TRAINING CODE			LANDINGS	
INSTRUCTOR			STUDENT	

Q: PUI met or exceeded performance standards.

U: PUT did not meet performance standards.

DND: Skill required for event completion, but was not completed.

N/A: Skill not applicable to this event.

CHAPTER 2

CH-53 CREW CHIEF AND AERIAL OBSERVER

*** * N O T E * ***

Aircrews shall include Crew Resource Management (CRM) techniques as part of their brief.

CHAPTER 2

CH-53 CREW CHIEF AND AERIAL OBSERVER

200. MARINE HEAVY HELICOPTER SQUADRON (CH-53E) UNIT CORE COMPETENCY. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The CH-53 Training & Readiness (T&R) Manual represents the collaborative effort of CH-53 Subject Matter Experts who designed training standards to maximize the full combat capabilities of the CH-53 and its crew. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aircrew maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained aircrews remain ready, relevant, and fully capable of supporting the MAGTF Commander.

1. HMH Mission. Support the MAGTF Commander by providing assault support transport of heavy weapons, combat troops, equipment and supplies, day or night under all weather conditions during expeditionary, joint or combined operations.

2. Mission Essential Task List (METL)

a. (UJTL TA 1.1.2) Conduct Shipboard Deck Helicopter Landing Qualifications.

b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations.

(1) Maintain the capability to deploy and operate from advanced bases, expeditionary airfields, Forward Operating Bases (FOBs), and naval shipping.

(2) Maintain the capability to conduct extended range operations employing aerial refueling.

(3) Perform organizational maintenance on assigned aircraft.

c. (UJTL TA 1.2.1) Conduct Air Assault Operations and Air Assault.

(1) Provide assault support transport of heavy equipment, supplies, and combat troops using internal and/or external means.

(2) Provide support for casualty evacuation operations.

(3) Maintain self-defense capability from ground-to-air and air-to-air threats.

d. (UJTL TA 1.2.3) Conduct Amphibious Assault and Raid Operations.

(1) Conduct assault support for maritime special operations.

e. (UJTL TA 4.2) Distribute Supplies and Provide Transport Service

(1) Conduct Aerial Re-supply.

(2) Provide support for mobile Forward Arming and Refueling Points (FARPS).

f. (UJTL TA 4.4) Conduct Joint Logistics Over-The-Shore Operations (JLOTS).

g. (UJTL TA 6.2) Conduct Joint Personnel Recovery.

(1) Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

(2) Augment local Search and Rescue (SAR) assets.

h. (UJTL TA 6.4) Conduct Noncombatant Evacuation.

(1) Provide support for evacuation operations.

3. Table of Organization. Refer to Table of Organization 8960 managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for CH-53E units. As of this publication date, CH-53E units are authorized:

Squadron
16 Aircraft
38 Pilots/26 Crew Chiefs/26 Aerial Observers

Reserve Squadron
8 Aircraft
18 Pilots/13 Crew Chiefs/13 Aerial Observers

Detachment
4 Aircraft
8 Pilots/6 Crew Chiefs/6 Aerial Observers

4. Core Capability. A core capable CH-53 squadron is able to sustain the number of sorties listed below on a daily basis during contingency/combat operations. The sortie rates are based on 1.8 hour average sortie duration and assumes $\geq$ 70 percent Full Mission Capable (FMC) aircraft and assigned crews $\geq$ 90 percent T/O aircrew. If unit FMC aircraft < 70 percent or assigned crews < 90 percent T/O, core capability will be degraded by a like percentage. A core capable squadron/detachment is able to accomplish all tasks designated in the unit Mission Essential Task List (METL) from a main base, expeditionary base, or amphibious platform.

a. Core Capable Squadron. A core capable CH-53E squadron is able to sustain 27 sorties.

b. Core Capable Reserve Squadron. A core capable Reserve squadron is able to sustain 14 sorties.

c. Core Capable Squadron (-). A core capable squadron (-) is able to sustain 21 sorties.

d. Core Capable Detachment. A core capable detachment is able to sustain 7 sorties.

5. METL/Core Skill Matrix. CH-53E core skills directly support the METL as follows:

CH53E EAC													
METL	CH-53E CORE SKILLS												
	FAM/ INST	INT	FORM	CAL	TERF	EXT	AR	FCLP	AG	GTR	TAC	NS HLL	NS LLL
a. Conduct Shipboard Deck Landing Qualifications	X		X	X				X				X	X
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X		X	X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X		X	X	X	X	X	X	X

CH-53E EAC									
METL	CH-53E CORE PLUS SKILLS								
	*HIE	*INT	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
a. Conduct Shipboard Deck Landing Qualifications					X	X			
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X	X	X	X	X
* Core Plus Skill									

6. CH-53E Core Model Minimum Requirements (CMMR). CMMR is measured in terms of the minimum numbers of core skill proficient crews and minimum numbers of combat leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit Core Skill Proficiency [CSP]).

CH-53E CMMR (Unit CSP Requirements) Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO	Crews
FAM/INST	32	-	-	16
INT	-	12	12	12
FORM	24	12	12	12
CAL	24	12	12	12
TERF	24	12	12	12
EXT	24	12	12	12
AR	12	-	-	6
FCLP	24	12	12	12
AG	16	8**		8
GTR	24	12	12	12
TAC	16	8	8	8
NS HLL	24	12	12	12
NS LLL	16	8	8	8
*HIE	8	4	4	4
*INT	-	4**		4
*GTR	16	8	8	8
*DM	16	8	8	8
*NBC	16	8	8	8
*CQ	18	9	9	9
*MTG	-	6**		6
*TG	-	8**		8
*TAC	16	8	8	8

CH-53E CMMR (Unit CSP Requirements) Squadron (-) (less 4 plane detachment)				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO	Crews
FAM/INST	24	-	-	12
INT	-	8	8	8
FORM	16	8	8	8
CAL	16	8	8	8
TERF	16	8	8	8
EXT	16	8	8	8
AR	8	-	-	4
FCLP	16	8	8	8
AG	12	6**		6
GTR	16	8	8	8
TAC	12	6	6	6
NS HLL	16	8	8	8
NS LLL	12	6	6	6
*HIE	6	3	3	3
*INT	-	4**		4
*GTR	12	6	6	6
*DM	12	6	6	6
*NBC	12	6	6	6
*CQ	10	5	5	5
*MTG	-	6**		6
*TG	-	6**		6
*TAC	12	6	6	6

CH-53E CMMR (Unit CSP Requirements) Reserve Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO	Crews
FAM/INST	18	-	-	9
INT	-	6	6	6
FORM	12	6	6	6
CAL	12	6	6	6
TERF	12	6	6	6
EXT	12	6	6	6
AR	6	-	-	3
FCLP	12	6	6	6
AG	8	4**		4
GTR	12	6	6	6
TAC	6	3	3	3
NS HLL	12	6	6	6
NS LLL	6	3	3	3
*HIE	4	2	2	2
*INT	-	2**		2
*GTR	8	4	4	4
*DM	8	4	4	4
*NBC	8	4	4	4
*CQ	8	4	4	4
*MTG	-	4**		4
*TG	-	4**		4
*TAC	6	3	3	3

CH-53E CMMR (Unit CSP Requirements) 4 Plane Detachment				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO	Crews
FAM/INST	8	-	-	4
INT	-	4	4	4
FORM	8	4	4	4
CAL	8	4	4	4
TERF	8	4	4	4
EXT	8	4	4	4
AR	4	-	-	2
FCLP	8	4	4	4
AG	4	4**		2
GTR	8	4	4	4
TAC	4	2	2	2
NS HLL	8	4	4	4
NS LLL	4	2	2	2
*HIE	4	2	2	2
*INT	-	1**		1
*GTR	8	4	4	4
*DM	8	4	4	4
*NBC	4	2	2	2
*MTG		4**		4
*TG	-	4**		4
*TAC	4	2	2	2

b. A standard CH-53E crew consists of 2 pilots, a Crew Chief (CC), and an Aerial Observer (AO). Crew chief surpluses may be used to satisfy AO requirements. A CSP crew consists of individuals representing each crew position who have achieved and maintain individual CSP. In order to be considered proficient in a core skill, a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below.
* Proficiency in Core Plus Skills is not required to obtain unit CSP.
** Position may be filled by either CC or AO.

(1) Events Required to Attain Individual CSP. To initially attain CSP in a core skill, an individual must simultaneously have a 'proficient' status in all of the Core (200-300) T&R events listed in the table below for that core skill.

CH-53E Crew Chief Individual CSP Attain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to attain CSP	200R 201R	210R	220 221R	230 231R	240R 241R 242R 243R 244R 342R 343R	271R 272 273R	280R 281R 380R 381R	350R	290 390R	211R 222 223R 232 233R 291R	320 321R 330 331R 391R
R = Refresher S = Event conducted in simulator											

CH-53E AO Individual CSP Attain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to attain CSP	200R 201R	210R	220 221R	230 231R	240R 241R 242R 243R 244R 342R 343R	271R 272 273R	280R 281R 380R 381R	350R	290 390R	211R 222 223R 232 233R 291R	320 321R 330 331R 391R
R = Refresher S = Event conducted in simulator											

(2) Events Required to Maintain Individual CSP. To maintain CSP in a core skill, an individual must maintain proficiency in all of the Core (200-300) T&R events listed in the table below for that core skill.

CH-53E Crew Chief Individual CSP Maintain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to maintain CSP	200R 201R	210R	221R	231R	244R 342R 343R	273R	281R 381R	350R	390R	223R 233R 291R	321R 331R 391R
R = Refresher S = Event conducted in simulator											

CH-53E AO Individual CSP Maintain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to maintain CSP	200R 201R	210R	221R	231R	244R 342R 343R	273R	281R 381R	350R	390R	223R 233R 291R	321R 331R 391R
R = Refresher S = Event conducted in simulator											

(3) Events Required To Attain Individual Proficiency In Core Plus Skills. Proficiency in core plus skills is not required to obtain unit CSP. Training to core plus skills is at the discretion of the unit commanding officer. To initially attain proficiency in a core plus skill, an individual must simultaneously have a 'proficient' status in all of the T&R events listed in the table below for that core plus skill:

CH-53E Crew Chief Individual Core Plus Skills Attain Table									
Core Plus Skills	*HIE	*INT	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to attain Core Skill Plus Proficiency	400R 401R 402R	410R	450R	451R 452R	460R	470 471 472R	480R	481R 482R 483R	490R 492R
R = Refresher S = Event conducted in simulator									

CH-53E AO Individual Core Plus Skills Attain Table									
Core Plus Skills	*HIE	*INT	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to attain Core Skill Plus Proficiency	400R 401R 402R	410R	450R	451R 452R	460R	470 471 472R	480R	481R 482R 483R	490R 492R
R = Refresher S = Event conducted in simulator									

(4) Events Required to Maintain Individual Proficiency in Core Plus Skills. To maintain proficiency in a core plus skill, an individual must maintain proficiency in all of the T&R events listed in the table below for that core plus skill:

CH-53E Crew Chief Individual Core Plus Skills Maintain Table									
Core Skills	*HIE	*INT	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to Maintain Core Skill Plus Proficiency	400R 401R 402R	410R	450R	451R 452R	460R	472R	480R	483R	490R 492R
R = Refresher S = Event conducted in simulator									

CH-53E AO Individual Core Plus Skills Maintain Table									
Core Skills	*HIE	*INT	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to Maintain Core Skill Plus Proficiency	400R 401R 402R	410R	450R	451R 452R	460R	472R	480R	483R	490R 492R
R = Refresher S = Event conducted in simulator									

7. Qualifications And Designations Tables. The tables below delineate T&R events required to be completed to attain initial qualifications and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification. Re-designation criteria shall be in accordance with T&R Program Manual and paragraph 130.4 of this Manual.

Qualification	**Initial Event Qualification Requirements**
TERF	230,231(R)
DM	451(R),452(R)
NSQ-HLL	211R,222,223(R),232,233(R),291(R)
NSQ-LLL	320,321(R),330,331(R),391(R)
AG	280,281(R),380,381(R)
TG	481,482,483(R)
NATOPS	600 and IAW OPNAV 3710.7.

Designation	**Designation Requirements**
TERFI	IAW MAWTS-1 Course Catalog
DMI	IAW MAWTS-1 Course Catalog
NSI	IAW MAWTS-1 Course Catalog
WTI	IAW MAWTS-1 Course Catalog
AGI (CC/AO)	IAW MAWTS-1 Course Catalog
TGI (CC)	IAW MAWTS-1 Course Catalog
NSFI	IAW MAWTS-1 Course Catalog

8. Instructor Requirements. A squadron should possess the following numbers of aircrew with the listed instructor designations IAW the CH-53 T&R and MCO 3500.12C (WTTP).

Squadron		
INSTRUCTOR DESIGNATION	Crew Chiefs	AO
TERFI	8	
DMI	4	
NSI	6	
WTI	3	
AGI	6*	
TGI	2	
*AO designated as AGI's may be used to fulfill this requirement.		

Reserve Squadron		
INSTRUCTOR DESIGNATION	Crew Chiefs	AO
TERFI	3	
DMI	2	
NSI	3	
WTI	2	
AGI	3*	
TGI	1	
*AO designated as AGI's may be used to fulfill this requirement.		

Squadron (-)		
INSTRUCTOR DESIGNATION	Crew Chiefs	AO
TERFI	3	
DMI	2	
NSI	4	
WTI	2	
AGI	3*	
TGI	1	
*AO designated as AGI's may be used to fulfill this requirement.		

Detachment		
INSTRUCTOR DESIGNATION	Crew Chiefs	AO
TERFI	2	
DMI	1	
NSI	1	
WTI	1	
AGI	1*	
TGI	1	
ARI	-	
*AO designated as AGI's may be used to fulfill this requirement.		

201. MARINE HEAVY HELICOPTER SQUADRON (CH-53D) UNIT CORE COMPETENCY. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The CH-53 T&R Manual represents the collaborative effort of CH-53 Subject Matter Experts who designed training standards to maximize the full combat capabilities of the CH-53 and its crew. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aircrew maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained aircrews remain ready, relevant, and fully capable of supporting the MAGTF commander.

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2. Mission Essential Task List (METL)

a. (UJTL TA 1.1.2) Conduct Shipboard Deck Helicopter Landing Qualifications.

b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations.

(1) Maintain the capability to deploy and operate from advanced bases, expeditionary airfields, Forward Operating Bases (FOBs), and naval shipping.

(2) Perform organizational maintenance on assigned aircraft.

c. (UJTL TA 1.2.1) Conduct Air Assault Operations and Air Assault

(1) Provide assault support transport of heavy equipment, supplies, and combat troops using internal and/or external means.

(2) Provide support for casualty evacuation operations.

(3) Maintain self-defense capability from ground-to-air and air-to-air threats.

d. (UJTL TA 1.2.3) Conduct Amphibious Assault and Raid Operations

(1) Conduct assault support for maritime special operations.

e. (UJTL TA 4.2) Distribute Supplies and Provide Transport Service

(1) Conduct Aerial Re-supply.

(2) Provide support for mobile Forward Arming and Refueling Points (FARPS).

f. (UJTL TA 4.4) Conduct Joint Logistics Over-The-Shore Operations (JLOTS).

g. (UJTL TA 6.2) Conduct Joint Personnel Recovery.

(1) Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.

(2) Augment local Search and Rescue (SAR) assets.

h. (UJTL TA 6.4) Conduct Noncombatant Evacuation.

(1) Provide support for evacuation operations.

3. Table of Organization. Refer to Table of Organization 8950X managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for CH-53D units. As of this publication date, CH-53D units are authorized:

Squadron
10 Aircraft
27 Pilots/22 Crew Chiefs/16 Aerial Observers

4. Core Capability. A core capable CH-53D squadron is able to sustain 17 sorties listed below on a daily basis during contingency/combat operations. The sortie rates are based on 1.5 hour average sortie duration and assumes $\geq$ 70 percent FMC aircraft and assigned crews $\geq$ 90 percent T/O aircrew. If unit FMC aircraft < 70 percent or assigned crews < 90 percent T/O, core capability will be degraded by a like percentage. A core capable squadron is able to accomplish all tasks designated in the unit METL from a main base, expeditionary base, or amphibious platform.

5. METL/Core Skill Matrix. CH-53D core skills directly support the METL as follows:

CH-53D EAC												
METL	CH-53D CORE SKILLS											
	FAM/ INST	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
a. Conduct Shipboard Deck Landing Qualifications	X		X	X			X				X	X
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X		X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X		X	X	X	X	X	X

CH-53D EAC								
METL	CH-53D CORE PLUS SKILLS							
	*HIE	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
a. Conduct Shipboard Deck Landing Qualifications				X	X			
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X	X
f. Conduct Joint Logistics Over-The-Shore Operations (JLOTS)	X	X	X	X	X	X	X	X
g. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X
h. Conduct Noncombatant Evacuation	X	X	X	X	X	X	X	X
*Core Plus Skill								

6. CH-53D Core Model Minimum Requirements (CMMR). CMMR is measured in terms of the minimum numbers of core skill proficient crews and minimum numbers of leaders per paragraphs a and b below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit CSP).

CH-53D CMMR (Unit CSP Requirements) Squadron				
CORE SKILL *CORE PLUS	Pilots	Crew Chiefs	AO	Crews
FAM/INST	20	-	-	-
INT	-	10	10	10
FORM	16	8	8	8
CAL	16	8	8	8
TERF	16	8	8	8
EXT	16	8	8	8
FCLP	16	8	8	8
AG	12	6**		6
GTR	16	8	8	8
TAC	12	6	6	6
NS HLL	16	8	8	8
NS LLL	12	6	6	6
*HIE	6	3	3	3
*GTR	12	6	6	6
*DM	12	6	6	6
*NBC	16	8	8	8
*CQ	16	8	8	8
*MTG	-	6**		6
*TG	-	6**		6
*TAC	16	8	8	8

b. A standard CH-53D crew consists of 2 pilots, a CC, and an AO. Crew chief surpluses may be used to satisfy AO requirements. ** Position may be filled by either CC or AO. A CSP crew consists of individuals representing each crew position who have achieved and maintain individual CSP. In order to be considered proficient in a core skill, a crewmember must attain and maintain proficiency in core skill events, as delineated below.

(1) Events Required to Attain Individual CSP. To initially attain CSP in a core skill, an individual must simultaneously have a 'proficient' status in all of the Core (200-300) T&R events listed in the table below for that core skill.

CH-53D Crew Chief Individual CSP Attain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to attain CSP	200R 201R	210R	220 221R	230 231R	241R 242R 244R 342R 343R	271 272 273R	280R 281R 380R 381R	350R	290 390R	211R 222 223R 232 233R 291R	320 321R 330 331R 391R
R = Refresher POI Event S = Event conducted in simulator											

CH-53D AO Individual CSP Attain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to attain CSP	200R 201R	210R	220 221R	230 231R	241R 242R 244R 342R 343R	271 272 273R	280R 281R 380R 381R	350R	290 390R	211R 222 223R 232 233R 291R	320 321R 330 331R 391R
R = Refresher POI Event S = Event conducted in simulator											

(2) Events Required to Maintain Individual CSP. To maintain CSP in a core skill, an individual must maintain proficiency in all of the Core (200-300) T&R events listed in the table below for that core skill.

CH-53D Crew Chief Individual CSP Maintain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to maintain CSP	200R 201R	210R	221R	231R	244R 342R 343R	273R	281R 381R	350R	390R	223R 233R 291R	321R 331R 391R
R = Refresher POI Event S = Event conducted in simulator											

CH-53D AO Individual CSP Maintain Table											
Core Skills	INT	FORM	CAL	TERF	EXT	FCLP	AG	GTR	TAC	NS HLL	NS LLL
T&R event requirements to maintain CSP	200R 201R	210R	221R	231R	244R 342R 343R	273R	281R 381R	350R	390R	223R 233R 291R	321R 331R 391R
R = Refresher POI Event S = Event conducted in simulator											

(3) Events Required To Attain Individual Proficiency In Core Plus Skills. Proficiency in core plus skills is not required to obtain unit CSP. Training to core plus skills is at the discretion of the unit commanding officer. To initially attain proficiency in a core plus skill, an individual must simultaneously have a 'proficient' status in all of the T&R events listed in the table below for that core plus skill:

CH-53D Crew Chief Individual Core Plus Skills Attain Table								
Core Plus Skills	*HIE	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to attain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	472R	480R	481R 482R 483R	490R 492R
R = Refresher POI Event S = Event conducted in simulator								

CH-53D AO Individual Core Plus Skills Attain Table								
Core Plus Skills	*HIE	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to attain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	472R	480R	481R 482R 483R	490R 492R
R = Refresher POI Event S = Event conducted in simulator								

(4) Events Required to Maintain Individual Proficiency in Core Plus Skills. To maintain proficiency in a core plus skill, an individual must maintain proficiency in all of the T&R events listed in the table below for that core plus skill:

CH-53D Crew Chief Individual Core Plus Skills Maintain Table								
Core Plus Skills	*HIE	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to maintain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	472R	480R	483R	490R 492R
R = Refresher POI Event S = Event conducted in simulator								

CH-53D AO Individual Core Plus Skills Maintain Table								
Core Plus Skills	*HIE	*GTR	*DM	*NBC	*CQ	*MTG	*TG	*TAC
T&R event requirements to maintain Core Skill Plus Proficiency	400R 401R 402R	450R	451R 452R	460R	472R	480R	483R	490R 492R
R = Refresher POI Event S = Event conducted in simulator								

7. Qualifications And Designations Tables. The tables below delineate T&R events required to be completed to attain initial qualifications and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification. Re-designation criteria shall be in accordance with MCO P3500.14 and paragraph 130.4 of this Manual.

Qualification	**Initial Event Qualification Requirements**
TERF	230,231(R)
DM	451(R),452(R)
NSQ-HLL	211(R),222,223(R),232,233(R),291(R)
NSQ-LLL	320,321(R),330,331(R),391(R)
AG	280(R),281(R),380(R),381(R)

Designation	**Designation Requirements**
TERFI	IAW MAWTS-1 Course Catalog
DMI	IAW MAWTS-1 Course Catalog
NSI	IAW MAWTS-1 Course Catalog
WTI	IAW MAWTS-1 Course Catalog
CSII	508,509,510
AGI (CC/AO)	IAW MAWTS-1 Course Catalog
TGI (CC)	IAW MAWTS-1 Course Catalog
NSFI	IAW MAWTS-1 Course Catalog

8. Instructor Requirements. A squadron should possess the following numbers of aircrew with the listed instructor designations IAW the CH-53 T&R and MCO 3500.12C (WTTP).

Squadron		
INSTRUCTOR DESIGNATION	Crew Chiefs	AOs
TERFI	4	
DMI	2	
NSI	3	
WTI	2	
CSII	1	
AGI	3*	
TGI	2	
*AO designated as AGIs may be used to fulfill this requirement.		

202. PROGRAM OF INSTRUCTION (POI) FOR BASIC AND TRANSITION CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1-17	CH-53E Core Skill Intro	FRS
	Core Skill Basic Phase	Tactical Squadron
	Core Skill Advanced Phase	Tactical Squadron
	Core Skill Plus Phase	Tactical Squadron

203. POI FOR REFRESHER AND SERIES CONVERSION CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1	CH-53D or CH-53E Familiarization	Tactical Squadron/MAG-24
2-4	Ground Schools/OJT	Tactical Squadron/MAG-24
5-12	Core Skill Introduction Phase	Tactical Squadron/MAG-24
	Core Skill Basic Phase	Tactical Squadron
	Core Skill Advanced Phase	Tactical Squadron
	Core Skill Plus Phase	Tactical Squadron

204. POI FOR BASIC, TRANSITION, REFRESHER AND SERIES CONVERSION AERIAL OBSERVER

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground School	Tactical Squadron
3-15	Core Skill Introduction Phase	Tactical Squadron
	Core Skill Basic Phase	Tactical Squadron
	Core Skill Advanced Phase	Tactical Squadron
	Core Skill Plus Phase	Tactical Squadron

210. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
SERE School	Jt Training Course
CH-53D/E Power Plants and Related/Rotors	CNATT MARU
Appropriate Aerial Gunnery School	Group/Squadron
Aviation Physiology/Aviation Water Survival	Aviation Physiology Unit

211. AIRCREW TRAINING REFERENCES. Aircrews shall use the following references to ensure safe and standardized training and maintenance procedures, grading criteria, and aircraft operation:

Designator	Title
OPNAVINST 3710.7	NATOPS General Flight and Operations
NAVAIR 01-230HMA-1	CH-53D NATOPS Flight Manual
NAVAIR A1-H53BE-NFM-000	CH-53E NATOPS Flight Manual
MCO P3500.14	T&R Program Manual
MCO P4790.20	Individual Training Standards System (MATMEP)
MCO 3501.4	Marine Corps Combat Readiness and Evaluation System
OPNAVINST 4790.2	Naval Aviation Maintenance Program
Support Package	MAWTS-1 Course Catalog
Support Package	MAWTS-1 Enlisted Aircrew Academic
NAVAIR 00-80T-106	LHA/LPH/LHD NATOPS Manual
NWP-42	Shipboard Helicopter Operations Manual
ANTTP 3-22.3-53 & Procedures	CH-53 Air Naval Tactics Techniques

212. SQUADRON LEVEL TRAINING. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

NATOPS Manual
ANTTP 3-22.3-53
Publications and Related Directives
Communications Procedures
Fueling and Servicing
Ground Handling
Helicopter Loading/Equipment Storage
Maintenance Procedures and Troubleshooting
Safety
Survival and First Aid
Aerial Gunnery Training
Aerial Delivery
CH-53 FARP
External Operations
Helicopter Insertion/Extraction Operations
MAGTF Organization/Equipment
MAGTF: The Amphibious Assault
Map Reading
Night Vision Systems
Night Vision Techniques
Rappel Operations
Rope Suspension Training
Search and Rescue
Shipboard Operations and Procedures
Terrain Flight Introduction
Terrain Flight Externals
TRAP
Tactical Briefing/Debriefing
AN/ALE Systems (S)
APR-39 Trainer (15E36) (S)
Helo ESM/ECM Equipment (S)
Countering the FW Threat
Counter Surface-to-Air Threats (S)
Countering the RW Threat (S)
Helicopter Defensive Measures
NBC Threat(S)
Recognition Training
Soviet model IADS
Tactical Formation Maneuvering
Tactical Crew Resource Management Responsibilities

230. EVENT PERFORMANCE REQUIREMENTS

1. General

a. This Manual is written to allow for local conditions and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest developed and proven tactics.

b. All events shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques.

c. Aircrew shall fly events annotated with an N at least 30 minutes after official sunset.

d. Aircrew shall fly night events in accordance with the following list of acronyms for event conditions:

Environmental Conditions	
Code	Meaning
	Shall be flown daytime: (by exception - there is no use of a symbol).
N	Shall be flown at night, may be aided or unaided.
N*	Shall be flown at night, must be flown unaided.
(N*)	May be flown at night – If flown at night, must be flown unaided.
(N)	May be flown at night – If flown at night; may be flown aided or unaided.
NS	Shall be flown during at night – Mandatory use of Night Vision Devices.
(NS)	May be flown at night – If flown at night; must be flown with Night Vision Devices.
Note – If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

e. List of Acronyms for Crew Requirements:

(1) CC – Crew Chief.

(2) AO – Aerial Observer.

(3) CCUI – Crew Chief Under Instruction.

(4) AOUI – Aerial Observer Under Instruction.

(5) AG – Aerial Gunner (may be a Crew Chief or Aerial Observer who is aerial gun qualified).

(6) AGUI – Aerial Gunner Under Instruction (may be a Crew Chief or Aerial Observer).

(7) TG – Tail Gunner.

(8) TGUI – Tail Gunner Under Instruction.

f. A CCUI shall complete the appropriate Marine Enlisted Aircrew Training (MEAT) academic instruction prior to commencement of flight training.

2. Syllabus Assignment

a. CH-53 Basic, Transition, Model Conversion and Refresher Aircrew

(1) Basic, Transition, and Model Conversion aircrew shall be assigned to fly the entire Basic POI. Refresher aircrew will fly those events designated by an R in the flight description.

(2) The squadron training officer shall enter all Aircrew Training Forms (ATF) in section 3 of the APR for all flights designated by R in the flight description. These ATFs will replace ATFs previously entered in section 3.

b. CH-53E to CH-53D Initial Accession Series Conversion

(1) CH-53D Core Skill Introduction training conducted at MAG-24 shall be conducted IAW the MAG-24 Core Skill Introduction Training Standardization Manual. The MAG-24 standardization department shall manage and execute CH-

53E to CH-53D Initial Accession Series Conversion Core Skill Introduction training (vice a CH-53 FRS).

(2) Aircrew assigned to these syllabi shall check into their parent squadron and subsequently be issued TAD orders to MAG-24. Aircrew shall be assigned to the MAG-24 standardization department for the duration of Core Skill Introduction training. Parent squadrons shall not assign these aircrew collateral duties during the course of Core Skill Introduction training.

(3) The MAG-24 standardization department shall be headed by the MAG DOSS and shall be manned by a minimum of 3 pilot and 3 CC CH-53D Core Skill Introduction Instructors (CSII). Each MAG-24 CH-53D Squadron shall be manned by a minimum of 1 pilot and 1 CC CSII.

(4) The MAG-24 standardization evaluator shall certify all CSIIs prior to designation. The MAG-24 standardization evaluator shall conduct an annual standardization check for all MAG CSIIs.

(5) Only the MAG-24 Commanding Officer may approve waiver/deferral of Core Skill Introduction training (per paragraph 305 of MCO P3500.14 (Program Manual).

(6) MAG-24 shall coordinate aircraft support from CH-53D squadrons in support of these syllabi.

(7) All CH-53E to D Initial Accession Series Conversion flight events are 2.0 hours in duration.

(8) MAG-24 shall provide a training environment where other billet responsibilities do not detract from that training IAW MCO P3500.14(Program Manual).

(9) CH-53E to CH-53D Initial Accession Series Conversion enlisted aircrew will fly those 100 level flights designated by a SCD in the event description.

(10) CH-53D initial accession enlisted aircrew will perform Basic Core Skill Introduction training at HMT-302 followed by CH-53E to CH-53D series conversion Core Skill Introduction training conducted at MAG-24. Upon completion of CH-53E to CH-53D series conversion Core Skill Introduction training, initial accession enlisted aircrew shall resume the Basic POI syllabus per the T&R.

c. CH-53 Series Conversion

(1) CH-53D to CH-53E Series conversion enlisted aircrew currently qualified on the CH-53D will fly those 100 level flights designated by an SCE in the event description at the tactical squadron.

(2) CH-53E to CH-53D Series conversion enlisted aircrew currently qualified on the CH-53E will fly those 100 level flights designated by a SCD in the event description at the tactical squadron.

(3) Upon completion of 100 level SCD/E events, Series Conversion enlisted aircrew shall continue to fly 200-400 level SC-coded events at the tactical squadron.

d. Secondary AMOS Crew Chief. All efforts shall be made with MMEA-84 to receive assignment of Primary MOS CCs prior to utilizing secondary AMOS program. If inventory shortages cannot be filled through MMEA-84, authorization is granted to individual unit CO's to train secondary AMOS 6173 under the following guidelines:

(1) The number of secondary MOS CCs that an individual unit Commander may train is limited to the current staffing formula; 1.6 CC x primary assigned aircraft (PAA) = number of CCs minus primary/additional MOS CCs on hand. For example, if a squadron has 14 primary/additional MOS CCs assigned, and the staffing formula computes to 19 total CCs, unit commanders may only request to train a maximum of 5 secondary AMOS CCs to equal PAA.

(2) To ensure standardization of training and aviation adaptability, all requested trainees shall be designated an aerial observer prior to starting secondary AMOS training.

(3) The source population shall be restricted to aviation maintenance MOS of 611x, 615x, and 632x only. All requests shall be submitted via DMS format to CG TECOM ATB (C4610) for approval prior to trainee starting flight syllabus. MSG shall include:

(a) Organization requesting training of secondary AMOS CC.

(b) Name, rank, MOS, and SSN of trainee.

(c) Total number of CCs rated by PAA.

(d) Total number of primary and secondary AMOS CCs assigned to requesting MCC.

(e) Adequate justification for training a secondary AMOS CC.

(f) Faxed copy of initial AO NATOPS evaluation report (OPNAV 3710.7 form).

(4) Upon receipt of request, ATB will approve/disapprove request via ASL/ASM and notify requesting command through DMS format. Approved training will be conducted in strict compliance with this manual and MCO P1200.7_ Military Occupational Specialties Manual. Additional requirements are outlined below:

(a) All Secondary AMOS Crew Chiefs shall be assigned to fly the entire Basic POI. Core Skill Basic, Advanced and Plus flights previously flown as an Aerial Observer shall not transfer to the training of the secondary AMOS CC. All flights must be flown with CCUI acting in the capacity of a CC.

(b) To ensure MOS standardization all core skill introduction (100 Level series) codes shall be flown with a current Enlisted Weapons and Tactics Instructor (MOS 6177) or NATOPS Evaluator/Instructor holding a primary MOS of 6173. Only a currently assigned and designated FRS CC instructor (CCI) shall administer the core skill introduction evaluation flight.

(c) The Total Time to Train (TTT) secondary AMOS CCs shall not exceed 6 months. The date of initial flight and completion of evaluation flight define the TTT.

(5) Only the FRS CO's have the authority to designate the secondary AMOS of 6173. The evaluation flight may be flown at the respective FRS or individual requesting squadron. Requesting commands shall coordinate with FRS for scheduling of the evaluation flight. TAD funding for either the trainee or FRS CC instructor shall be the responsibility of the requesting squadron.

(6) The FRS CCI shall administer the oral and Core Skill Introduction evaluation flight and closed book NATOPS examination. Prior to Core Skill Introduction evaluation flight parent commands shall ensure:

(a) Nominees complete squadron approved open book NATOPS examination.

(b) Nominees are designated a plane captain by unit CO.

(c) Prior to designation, nominees shall attend SERE training.

(7) Upon completion of Core Skill Introduction evaluation flight, copies of all certifications and evaluations shall be submitted to respective FRS CO's for secondary AMOS certification/approval. Documents to be submitted are:

(a) Copy of current flight physical.

(b) Copy of physiology/water survival Form 3760/32.

(c) Copy of all CC 100 series ATF's.

(d) Copy of current flight orders.

(e) Copy of section III(c), examination record, OPNAV 3760/32G.

(f) Copy of current plane captain designation.

(g) Copy of initial AO evaluation form, OPNAV 3710/7.

(h) Original CC evaluation form, OPNAV 3710/7.

(i) Copy of SERE completion certificate.

(j) Marines listed as instructor on 100 series ATFs must submit a copy of respective WTI certificate or NATOPS Evaluator/Instructor designation.

(k) The primary purpose of this documentation is to assist the model manager in tracking the certification process and identifies positive/negative trends in the training process.

(l) Evaluation standards applicable to primary MOS CCs shall be strictly adhered to.

(8) The FRS CCI shall forward original OPNAV 3710/7 form to FRS CO for approval. The FRS CO shall sign the NATOPS evaluation and a CC designation letter and forward to the originating command for insertion into trainees NATOPS jacket.

(9) In order to facilitate management of the MOS end strengths, secondary AMOS CCs desiring a primary 6173 MOS, will forward the appropriate AA form to MMEA-6 requesting a lateral move from a secondary AMOS CC to a primary MOS CC.

(10) On hand primary designated MOS CC shall have priority for crewmember flight orders IAW MCO1326.2G.

(11) This policy applies to Marines currently in training and is effective immediately. This is not applicable to Marines designated prior to this revision, or Marines currently assigned to the Executive Flight Detachment of HMX-1.

(12) Refer to DMS R CG TECOM ATB 141412Z APR 05 for Helicopter Additional MOS Crew Chief Training Program Message.

(13) POC for secondary AMOS Crew Chief Training Program is TECOM ATB.

4. Prior Qualification. Previously qualified CH-53 CCs and AOs returning from a non-flying tour will fly the appropriate Refresher POI.

5. Aircrew Training Events

a. All CCs and AOs shall have an evaluation form filled out upon completion of the following:

(1) Core Skill Introduction Check (CSIX-191). For initial accession or newly assigned aircrew, a designated FRS CCI or MAG-24 CSII shall evaluate the CSIX-191. For refresher or series conversion aircrew, a qualified NATOPS Instructor/Assistant or Evaluator shall evaluate the CSIX-191. This event is considered the initial NATOPS evaluation.

(2) Annual NATOPS Check (EVAL-600). A designated NATOPS Instructor/ Assistant or Evaluator shall evaluate the EVAL-600.

(3) Any initial flight not requiring an instructor. A CC who is proficient in that sortie shall evaluate and complete an ATF.

(4) Any sortie that requires an NSI, AGI, TERFI, TGI or DMI.

b. If the commanding officer has waived or deferred a syllabus sortie, the squadron training officer shall place a waiver or deferment letter in section 3 of the APR.

c. All ATFs shall annotate the appropriate crew position under instruction.

6. Crew Resource Management (CRM). Aircrew shall brief techniques and aspects of CRM for all flights and/or events. The CC will always be alert for other aircraft or obstacles to flight. He will supervise internal loading at the direction of the pilot, verbally direct the pilot during external hookups and releases, and supervise the embarkation and debarkation of passengers. The CC may detect system failures before the pilot and must inform him of potential malfunctions. He can effect minor airborne repairs and supervise any additional crew members that the mission may require.

231. CORE SKILL INTRODUCTION PHASE

1. Familiarization (FAM)

a. Purpose. To familiarize the aircrew with CH-53 operations and procedures.

b. General

(1) Aircrew may fly these flights in conjunction with the pilot syllabus. All NS flights must be flown under ambient light conditions of .0022 LUX or greater. The aircrew should complete all appropriate familiarization stage flights prior to flying any subsequent flights.

(2) Instructors shall be a CCNSFI or CCNSI for FAM-121, FAM-122, INT-135 and INT-136 if flown with NS, FORM-153, CAL-163, CAL-164, EXT-171, and EXT-173.

c. Crew Requirement. CCI/CCUI or CCI/AOUI.

d. Training Prerequisite. Aircrew must complete their physical, Naval Aviation Water Survival Training Program (NAWSTP), Naval Aviation Physiology Training Program (NAPTP) prior to FAM-110.

e. Ground Training

(1) Publications and related directives.

(2) Safety.

(3) Ground handling.

(4) CRM.

(5) Night Imaging and Threat Evaluation (NITE) Lab Instruction.

(6) Fueling and servicing.

(7) Helicopter loading and equipment storage.

(8) Maintenance procedures and troubleshooting.

f. Flight Training. (8 Flights, 12.0 Hours).

FAM-110 1.5 1 CH-53

Goal. Introduce CH-53 aircrew duties.

Requirement

Discuss:
- Engine compartment fire on the ground.
- APP fire.
- Fuselage fire.
- Electrical fire.
- Engine post shutdown fire.
- Fire fighting equipment operation.
- Hand and arm signals for fires.
- System troubleshooting.

Introduce:
- Preflight.

Starting.
Taxi directions.
Lookout doctrine.
Servicing.
Post flight.
Turnaround inspection.
Emergency egress procedures.
Proper use of aircrew pocket checklist.

Performance standards. Exhibit basic understanding of CH-53 aircrew duties.

Prerequisite. N/A.

FAM-111 1.5 SCD 1 CH-53

Goal. Practice CH-53 CC duties.

Requirement

Discuss:
Review FAM-110 (SCD).
Ramp operation.
Single, dual, and total engine failures on takeoff and landing.
Emergency water operation.
Flotation equipment and inflation procedures.
Ditching/abandoning aircraft.
Search and rescue scanning and sighting techniques.
Vibrations.
Landing gear system failure.

Introduce:
Blade and pylon fold procedures.
Systems troubleshooting.
Utility hoist operation, if equipped.
System function checks.

Practice:
Preflight and servicing.
Turn-up.
Taxi directions.
Lookout doctrine.
Shut down.
Post flight.

Performance Standards. Demonstrate a basic understanding of CH-53 CC duties.

Prerequisite. FAM-110.

FAM-112 1.5 1 CH-53

Goal. CCUI practices CH-53 CC duties.

Requirement

Review:
Aircrew Pocket Checklist Emergency Procedures.
Preflight and servicing.
Turn-up.

Taxi directions.
Lookout doctrine.
Shut down.
Post flight.

Performance Standards. Demonstrate a practical application of CH-53 CC duties IAW applicable NATOPS.

Prerequisite. FAM-111.

FAM-113 1.5 R,SCE 1 CH-53

Goal. CCUI reviews CH-53 CC duties.

Requirement

Discuss:
Basic CRM skills.

Review:
Emergency procedures.
Duties of the CC.

Performance Standards. Demonstrate basic CC duties.

Prerequisite. FAM-112.

FAM-119 1.5 SCD 1 CH-53 (NS)

Goal. Progress review of basic CC skills.

Requirement

Discuss:
Aircraft refueling procedures.
Aircraft tiedown.
Turn-up and shutdown procedures.
Emergency procedures.
Systems troubleshooting.

Performance Standards. Demonstrate basic CC skills, standard terminology, and application of emergency procedures.

Prerequisite. FAM-113.

FAM-120 1.5 1 CH-53 N*

Goal. Introduce CC duties during night operations in the CH-53.

Requirement

Discuss:
CH-53 lighting systems.
Night vision techniques as contained in ANTTP 3-22.3-53.
Airfield lighting.

Demonstrate:
Use of cargo tie down lights.
Cargo loading lights.
Emergency exit lights.

Cabin lighting.

Introduce:
Night preflight.
Turn-up.
Taxi.
Lookout doctrine.
Shutdown.
Post flight procedures.

Performance Standards. Demonstrate a basic knowledge of night operations in the CH-53.

Prerequisite. FAM-113.

FAM-121 1.5 1 CH-53 NS

Goal. Introduce the aircrew to NS operations.

Requirement

Discuss:
NS and CRM as contained in ANTTP 3-22.3-53.

Demonstrate:
Use of NS compatible cockpits.
Effects of cultural/artificial lighting on NS.

Introduce:
NS.
Ground relationship.
Obstacle clearance.
Distance estimation.
Depth perception.
Shadowing effects.

Performance Standards. Apply basic NS operational skills as demonstrated in the NITE LAB.

Prerequisite. FAM-113 and aircrew shall complete the NITE Lab. (FAM-110 for AO)

FAM-122 1.5 R 1 CH-53 NS

Goal. Review CC duties during NS operations.

Requirement

Discuss:
Cabin heater function.
Chill factor.

Review:
Night Preflight.
Turn-up.
Taxi.
Lookout doctrine.
Shutdown.
Post flight procedures.

Performance Standards. Upon completion of event CCUI shall demonstrate proficiency in basic NS operations.

Prerequisite. FAM-121.

2. Internal Loads (INT)

a. Purpose. To introduce CC duties in loading, securing and unloading passengers, cargo and vehicles.

b. General

(1) Aircrew may fly these flights in conjunction with any stage of the pilot syllabus.

(2) Instructor shall be a CCI, CCNSFI or CCNSI if NS are used.

c. Crew Requirement. CCI/CCUI.

d. Ground Training. Appropriate sections of the A1-H53BE-GLG-000 (Cargo Loading Manual), NATOPS Flight Manual, and helicopter loading and equipment storage.

e. Flight Training. (2 Flights, 3.0 Hours).

INT-135 1.5 1 CH-53 (N)

Goal. Introduce CC duties during flights carrying internal cargo and/or vehicles.

Requirement

Discuss:
- Safety regulations for loading and unloading cargo and vehicles.
- Safety regulations.
- Required flight/safety equipment for passengers.
- Troops and litter patients over land and water.
- MEDEVAC mission categories.

Introduce:
- Use of the cargo winch.
- Cargo and vehicle loading.
- Cargo Tiedown.
- Cargo unloading procedures.
- Passenger briefing.
- Embarking and debarking procedures.
- Proper litter attachment and securing.

Review:
- Ramp operation.

Performance Standards. Demonstrate basic knowledge of cargo winch and loading systems IAW the applicable Cargo Loading Manual.

Prerequisite. FAM-113.

INT-136 1.5 1 CH-53 (N)

Goal. Review CC duties during flights carrying internal cargo and/or vehicles.

Requirement

Demonstrate:
- Use of the cargo winch.
- Cargo and/or vehicle loading.
- Cargo and/or vehicle unloading.

Review:
- Emergency passenger egress.
- Abandon and ditching aircraft procedures.

Performance Standards. Conduct basic crew and passenger brief IAW the Aircrew Pocket Checklist.

Prerequisite. FAM-113.

3. Formation (FORM)

a. Purpose. To familiarize the aircrew with responsibilities during formation flight with emphasis on CRM.

b. General

(1) Aircrew may fly this stage in conjunction with the formation stage of the pilot syllabus.

(2) Instructor shall be a CCI, CCNSFI or CCNSI for FORM-153.

c. Crew Requirement. CCI/CCUI or CCI/AOUI.

d. Flight Training. (2 Flights, 3.0 Hours).

FORM-152 1.5 2 CH-53

Goal. Introduce aircrew responsibilities during formation flight.

Requirement
Discuss:
- Parade position.
- Formations.
- Closure rate.
- Hand and arm signals.
- In-flight emergency procedures.
- Standard terminology.

Performance Standards. Demonstrate a basic understanding and skill of formation flying IAW applicable NATOPS.

Prerequisite. FAM-113.

Range Requirements. Approved CAL/MAL site if conducted to a CAL site.

FORM-153 1.5 2 CH-53 NS

Goal. Introduce aircrew responsibilities during NS formation flight.

Requirement

Discuss:
Closure rate.
Aircraft lighting.
Light signals.
Lookout responsibilities.
Target fixation.
Standard terminology.
NS considerations.

Performance Standards. Demonstrate basic understanding and skill of NS formation flying IAW applicable NATOPS.

Prerequisite. FAM-122, FORM-152

Range Requirements. Approved CAL/MAL site if conducted to a CAL site.

4. Confined Area Landings (CAL)

a. Purpose. To introduce the aircrew to duties when landing in confined areas.

b. General

(1) Aircrew may fly this stage in conjunction with the CAL stage in the pilot syllabus.

(2) Instructor shall be a CCI, CCNSFI or CCNSI for CAL-163.

c. Crew Requirement. CCI/CCUI or CCI/AOUI.

d. Ground Training

(1) Survival and First Aid.

(2) Communications Procedures.

e. Flight Training. (4 Flights, 6 Hours).

CAL-161 1.5 SCD 1 CH-53

Goal. Introduce aircrew responsibilities during CALs.
Requirement

Discuss:
CALs.
CRM.

Introduce:
Lookout doctrine.
CRM.
Main rotor, tail rotor, and aircraft fuselage clearances.
Obstacle clearance during the approach, landing, and

takeoff.
Suitability of LZ terrain.
Drift correction calls to the pilot prior to aircraft touchdown.

Performance Standards. Demonstrate basic knowledge of CALs IAW applicable NATOPS.

Prerequisite. FAM-113 (FAM-110 for AO).

Range Requirements. Approved CAL/MAL site.

CAL-162 1.5 R,SCD,SCE 2 CH-53

Goal. Introduce aircrew responsibilities during day section CALs.

Requirement

Discuss:
Helicopter preparation.
Terrain.
Ground relationship.
Obstacle clearance.
Lookout doctrine with regards to section landings.
Standardized call for section landings into and out of LZ.
Wave off procedures.

Performance Standards. Demonstrate basic knowledge of section CALs in accordance with applicable NATOPS.

Prerequisite. CAL-161.

Range Requirements. Approved CAL/MAL site.

CAL-163 1.5 1 CH-53 NS

Goal. Introduce aircrew responsibilities during CALs at night utilizing NS.

Requirement

Discuss:
NS.
Helicopter preparation.
LZ lighting.
Terrain.
Ground relationship.
Obstacle clearance.
Distance estimation.
Depth perception.
Shadowing effects.
Drift calls.
Effects of snow, dust and rain.
Wave off procedures.

Performance Standards. Demonstrate basic aircrew responsibilities during CALs utilizing NS IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. FAM-122 and CAL-161.

Range Requirements. Approved CAL/MAL site.

CAL-164 1.5 R,SCE 2 CH-53 NS

Goal. Introduce aircrew responsibilities during section CALs at night utilizing NS.

Requirement

Discuss:
NS.
LZ lighting.
Distance estimation.
Depth perception.
Shadowing effects.
Effects of snow, dust and rain.
Lookout doctrine with regards to NS section landings.
Standardized call for NS section landings into and out of LZ.

Performance Standards. Demonstrate basic aircrew responsibilities during section CALs utilizing NS in accordance with applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. CAL-163.

Range Requirements. Approved CAL/MAL site.

5. External Loads (EXT)

a. Purpose. To develop skills necessary for external cargo operations.

b. General

(1) Aircrew may fly this stage in conjunction with the external stage of the pilot syllabus.

(2) Instructor shall be a CCI, CCNSFI or CCNSI for EXT-171 and 173.

c. Crew Requirement. CCI/CCUI or CCI/AOUI.

d. Ground Training. Consult MCRP 4-23E Multiservice Helicopter Sling Load Manual for Basic Operations and Equipment (Vol.1), Single Point Load Rigging Procedures (Vol.2) and Dual Point Load Rigging Procedures (Vol. 3).

e. Flight Training. (4 Flights, 5.0 Hours).

EXT-170 1.5 R,SCD,SCE 1 CH-53

Goal. Introduce aircrew duties and terminology used during single point external cargo operations.

Requirement

Discuss:
Crew Coordination.
External procedures.
HST considerations.

Standardized terminology.
Single point cargo hook system.
Cargo hook control panel.
Aircrew's portable pendant control.
Cargo hook emergency release handle (53D).
Static discharge precautions.
Load rigging.
Emergency cargo release.

Demonstrate:
Standardized terminology.
Cargo hook setup.
Hand and arm signals.

Introduce:
Standardized voice commands.
Loss of communication procedures.
Hookup and drop procedures.

Performance Standards. Perform 3 basic single point external hookups and releases IAW applicable NATOPS.

Prerequisite. CAL-161.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST and approved single point load.

EXT-171 1.5 R,SCD,SCE 1 CH-53 NS

Goal. Introduce aircrew duties and terminology used during single point external cargo operations utilizing NS.

Requirement

Review:
EXT-170.
FAM-122.

Discuss:
NS considerations.
Safety precautions.
Use of hover light.
External cargo lighting patterns.

Introduce:
Use of the hover light.
Use of Chem lights to mark cargo hook and load.
Hookup and drop procedures with NS.

Performance Standards. Perform 3 basic single point external hookups and releases while utilizing NS IAW applicable NATOPS.

Prerequisite. FAM-122 and EXT-170.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST and approved single point load.

EXT-172 1.5 R,SCE 1 CH-53

Goal. Review aircrew duties during external cargo operations in the CH-53D. Introduce aircrew duties and terminology used during dual point external operations in the CH-53E.

Requirement

Review:
EXT-170 (53D).

Discuss:

Proper preflight of dual point system.
Types of slings.
Crew coordination.
External procedures.
HST considerations.
Standardized terminology.
Dual point cargo hook system.
Cargo hook control panel.
Aircrew portable pendant control.
Cargo hook emergency release handle.
Static discharge precautions.
Load rigging.
Emergency cargo release.

Introduce:
Dual point external load hookup and release procedures.

Performance Standards. Perform 3 basic dual point hookups and releases IAW applicable NATOPS. For CH-53D review performance standards for the EXT-170.

Prerequisite. EXT-170.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST and approved dual point load.

EXT-173 1.5 R,SCE 1 CH-53 NS

Goal. Review aircrew duties during external cargo operations at night in the CH-53D. Introduce aircrew duties and terminology used during night dual point external operations in the CH-53E.

Requirement

Review:
EXT-172.

Discuss:
NS considerations
Safety precautions.
Use of hover light.
External cargo lighting patterns.

Introduce:
Use of the hover light.
Use of Chem lights to mark cargo hook and load.
Hookup and drop procedures with NS.

Performance Standards. Perform 3 basic dual point external hookups and releases utilizing NS IAW applicable NATOPS. For CH-53D review performance standards for EXT-171.

Prerequisite. EXT-171 and EXT-172.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST and approved dual point load.

6. Terrain Flight (TERF)

a. Purpose. To introduce skills necessary to perform TERF maneuvers safely; emphasize the importance of crew coordination, comfort level, and common terminology.

b. General

(1) Rules of conduct per T&R Program Manual.

(2) Instructor shall be CCI or TERFI.

c. Crew Requirement. CCI/CCUI or CCI/AOUI.

d. Ground Training. FRS Terrain Flight Introduction lecture prior to this stage of training.

e. Flight Training. (1 Flight, 1.5 Hours).

TERF-180 1.5 R,SCD 1 CH-53

Goal. Introduce the aircrew to maneuvers, clearances, and navigation while flying in the TERF environment.

Requirement
Discuss:
Crew comfort levels.
CRM.
Lookout doctrine.
Terminology.
ICS procedures.
Aircraft clearances.
Emergency procedures.
TERF maneuvers.
Navigation.

Introduce:
Low level and contour flight.

Performance Standards. Perform basic TERF maneuvers and navigation while in the TERF environment IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. FAM-113.

Range Requirements. Approved TERF maneuver area/route and CAL/MAL site.

7. Core Skill Introduction Evaluation Flight

a. Purpose. To demonstrate proficiency in performing duties as a Core Skill Introduction complete CC or AO per criteria contained in the appropriate CH-53 NATOPS Flight Manual and OPNAVINST 3710.7.

b. General

(1) A qualified CCNI shall evaluate this flight.

(2) The CCUI or AOUI shall complete a H-53 NATOPS Flight Manual Open and Closed book examination prior to the Core Skill Introduction check. Upon completion of this flight, the student will be NATOPS qualified as a CC or AO.

c. Crew Requirement. FRSCCI/CCUI or CCNI/AOUI.

d. Ground/Academic Training. Review of NATOPS and Aircrew Pocket Checklist.

e. Flight Training. (1 Flight, 1.5 Hours).

CSIX-191 1.5 R,SCD,SCE E 1 CH-53 (NS)

Goal. Evaluate systems knowledge of the CH-53 and the capability to perform duties as a Core Skill Introduction CC or AO.

Requirement

Discuss:
Crew brief.

Demonstrate:
Aircraft system knowledge.
Pre/post flight procedures.
In-flight procedures.
Emergency procedures.
CRM.

Performance Standards. Demonstrate proficiency for the applicable crew position as stated in the applicable NATOPS and the OPNAVINST 3710.7.

Prerequisite. All prior applicable 100 level flights. For Ch-53D Series Conversion and Refresher POI individuals: CH-53 NATOPS open and closed book exam.

232. CORE SKILL BASIC PHASE. Aircrew undergoing instruction in this phase must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training prior to conducting NS events. NS rules of conduct will be per T&R Program Manual. Aircrew will fly all NS events in this phase under ambient light conditions of .0022 LUX or greater. The aircrew under instruction is considered NSQ HLL (able to transport troops) when the following 6 events have been completed: FORM-211, CAL-222,

CAL-223, TERF-232, TERF-233, and TAC-291. These events require a CCNSI for all initial qualifications.

1. Internal Loads (INT)

a. Purpose. To refine aircrew duties in loading, securing, unloading passengers, cargo and vehicles.

b. Crew Requirement. CC, CC/CCUI or CC/AOUI.

c. Ground/Academic Training. Review of NATOPS procedures for internal loads and Cargo Loading Manual.

d. Flight Training. (2 Flights, 2.0 Hours).

INT-200 1.0 R 1 CH-53 (N)

Goal. Practice aircrew duties when carrying internal cargo and/or vehicles.

Requirement

Review:
- INT-135.
- INT-136.
- Cargo and/or vehicle loading, securing, and unloading procedures.

Discuss:
- Safety precautions and procedures used when transporting dangerous cargo petroleum, oxygen, lubricants (POL), liquid oxygen (LOX), pyrotechnics, and class V cargo (ammunition), etc.

Performance Standards. Demonstrate cargo and/or vehicle loading procedures IAW the Cargo Loading Manual and applicable NATOPS.

External Syllabus Support. Applicable cargo and/or vehicle(s).

INT-201 1.0 R 1 CH-53 (N)

Goal. Practice passenger briefing, embarking, securing, and debarking procedures.

Requirement

Review:
- INT-136.
- Procedures for embarking, securing, and debarking of passengers.

Discuss:
- Problems encountered while embarking, securing and debarking passengers.
- Emergency passenger egress.
- Abandon/ditching aircraft.

Performance Standards. Demonstrate passenger briefing, embarking, securing, and debarking procedures IAW applicable NATOPS.

2. Formation (FORM)

a. Purpose. To review aircrew responsibilities during formation flight and introduce responsibilities of tactical formation flight, day and night.

b. General

(1) A CCNSI is required on initial FORM-211.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. FORM-211 requires 2 HLL qualified aircrew if not an instructional flight.

d. Ground/Academic Training. Review of NATOPS procedures for FORM and ANTTP 3-22.3-53 techniques.

e. Flight Training. (2 Flights, 2.0 Hours).

FORM-210 1.0 R 2 CH-53

Goal. Demonstrate aircrew duties during basic formation flight and introduce tactical formation flight.

Requirement

Review:
- Formation.
- Closure rate.
- Lead changes (to include form lead/tactical lead).
- CRM.
- Loss of visual contact with wingman.
- Comfort levels.
- Emergency procedures.
- Section takeoffs, landings, approaches and waveoff's.

Introduce:
Section tactical formation.

Performance Standards. Demonstrate proficient knowledge of aircrew considerations during formation flight IAW applicable NATOPS. Practice aircrew duties during tactical formation flight IAW the applicable NATOPS and ANTTP 3-22.3-53.

FORM-211 1.0 R 2 CH-53 NS

Goal. Demonstrate aircrew duties during basic NS formation flight and introduce NS tactical formation flight.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- Formations.
- Closure rate.

Lead changes(to include form lead/tactical lead).
CRM.
Loss of visual contact with wingman.
Comfort level.
Emergency procedures.

Introduce:
Section NS Tactical Formation.

Performance Standards. Demonstrate proficient knowledge of aircrew considerations during basic NS formation flight IAW the applicable NATOPS. Practice aircrew duties during NS tactical formation flight IAW the applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. FORM-210.

3. Confined Area Landings (CAL)

a. Purpose. To review aircrew responsibilities during CALs and introduce CALs with multiple aircraft during day and night.

b. General

(1) A CCNSI is required on initial CAL-222/223.

c. Crew Requirement. CC, CC/CCUI or CC/AOUI. CAL-222 and CAL-223 require 2 HLL qualified aircrew if not an instructional flight.

d. Ground/Academic Training. Review of NATOPS procedures for CALs.

e. Flight Training. (4 Flights, 6.0 Hours).

CAL-220 1.5 1 CH-53

Goal. Introduce and practice CALs using tactical approaches.

Requirement

Discuss:
CALs.
CRM.
Lookout doctrine.
Aircraft clearances.
Terrain suitability.
Drift correction.

Introduce:
Tactical Approaches.

Performance Standards. Perform CALs utilizing tactical approaches IAW the applicable NATOPS and ANTTP 3-22.3-53.

Range Requirements. CAL/MAL site.

CAL-221 1.5 R,SC 2 CH-53

Goal. Introduce and practice tactical section CALs.

Requirement

Discuss:
- CALs.
- CRM.
- Lookout doctrine.
- Aircraft clearances.
- Terrain suitability.
- Drift correction.
- Tactical approaches.

Introduce:
- Section takeoffs, approaches, and landings to a CAL site.

Performance Standards. Demonstrate performance of aircrew duties during tactical section CALs IAW the applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. FORM-210, CAL-220.

Range Requirements. CAL/MAL site.

CAL-222 1.5 1 CH-53 NS

Goal. Introduce and practice CALs using NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- CALs.
- CRM.
- Lookout doctrine.
- Aircraft clearances.
- Terrain suitability.
- Drift correction.
- Dark adaptation.
- NS failures.
- Aircraft lighting.

Discuss:
- Depth perception.
- Possible reduced visibility.
- Obstacle clearance.

Performance Standards. Practice aircrew responsibilities during night CALs while using NS IAW with applicable NATOPS.

Prerequisite. CAL-220.

Range Requirements. CAL/MAL site.

CAL-223 1.5 R,SC 2 CH-53 NS

Goal. Introduce and practice section CALs using NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
NS CALs.
CRM.
Lookout doctrine.
Aircraft clearances.
Terrain suitability.
Drift correction.
Dark adaptation.
NS failures.
Aircraft lighting.
Depth perception.
Possible reduced visibility.
Obstacle clearance.

Introduce:
NS Section CALs.

Performance Standards. Practice aircrew responsibilities during NS section CALs IAW applicable NATOPS.

Prerequisite. FORM-211, CAL-221, CAL-222.

Range Requirements. CAL/MAL site.

4. Terrain Flight (TERF)

a. Purpose. To enhance aircrew responsibilities and lookout doctrine with TERF maneuvers/navigation and introduce section maneuvering in the day and night TERF environment.

b. General

(1) Currency restrictions per T&R Program Manual. Aircrew is considered TERF qualified at the completion of TERF-231.

(2) A CCTERFI is required for initial TERF-230/231 and a CCNSI is required for initial TERF-232/233.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. TERF-232 and TERF-233 require 2 HLL qualified aircrew if not an instructional flight.

d. Ground/Academic Training. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (4 Flights, 6.0 Hours).

TERF-230 1.5 1 CH-53

Goal. Review maneuvers and clearance while flying in a TERF environment.

Requirement

Instructor:
CCTERFI required for initial qualification and re-qualification.

Review:
Low level and contour flight.

Discuss:
Crew comfort levels.
CRM.
Lookout doctrine.
Terminology.
ICS procedures.
Obstacle clearance.
Emergency procedures.
TERF maneuvers.
Navigation.

Performance Standards. Perform TERF maneuvers and maintain aircraft clearance IAW the applicable NATOPS and ANTTP 3-22.3-53.

Range Requirements. Approved TERF maneuver area/route.

TERF-231 1.5 R,SC 2 CH-53

Goal. Introduce maneuvers and clearance for a section of aircraft in the TERF environment.

Requirement

Instructor:
CCTERFI required for initial qualification and re-qualification.

Review:
FORM-210.
TERF-230.

Discuss:
Crew comfort levels.
CRM.
Lookout doctrine.
Terminology.
ICS procedures.
Aircraft clearance.
Multiple aircraft operations.

Performance Standards. Perform TERF maneuvers in a section while in the TERF environment IAW the applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. FORM-210, and TERF-230.

Range Requirements. Approved TERF maneuver area/route.

TERF-232 1.5 1 CH-53 NS

Goal. Introduce maneuvers and clearance while flying in a TERF environment using NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- CAL-222.
- TERF-230.

Discuss:
- HLL NS considerations.
- Aircraft lighting.
- Crew comfort levels.
- CRM.
- Lookout doctrine.
- Terminology.
- ICS procedures.
- Obstacle clearance.
- Emergency procedures.

Performance Standards. Perform TERF maneuvers while in the TERF environment using NS in a HLL condition IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. TERF-230.

Range Requirements. Approved TERF maneuver area/route.

TERF-233 1.5 R,SC 2 CH-53 NS

Goal. Review maneuvers and clearance for a section of aircraft in the TERF environment using NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- CAL-223.
- TERF-232.

Discuss:
- HLL NS considerations.
- Aircraft lighting.
- Crew comfort levels.
- CRM.
- Lookout doctrine.
- Terminology.
- ICS procedures.
- Aircraft clearance.
- Emergency procedures.
- Multiple aircraft operations.

Performance Standards. Perform TERF maneuvers for a section while in the TERF environment using NS in a HLL condition IAW the applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. FORM-211, TERF-231 and TERF-232.

Range Requirements. Approved TERF maneuver area/route.

5. External Loads (EXT)

a. Purpose. To develop skills necessary for external loads in confined areas.

b. General

(1) Aircrew may fly these flights in conjunction with the pilot syllabus.

(2) A CCNSI is required for initial EXT-243/244.

(3) A CCTERFI is required for initial EXT-242.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. EXT-243 and EXT-244 require 2 HLL qualified aircrew if not an instructional flight.

d. Ground/Academic Training. Aircrew should review MCRP 4-23= Multiservice Helicopter Sling Load Manual for Basic Operations and Equipment.

e. Flight Training. (5 Flights, 7.5 Hours).

EXT-240 1.5 R,SC 1 CH-53

Goal. Practice single point externals.

Requirement

Review:
EXT-170.

Discuss:
Crew coordination.
External procedures.
HST considerations.
Standardized terminology.
Single point cargo hook system.
Cargo hook control panel.
Aircrew portable pendant control.
Cargo hook emergency release handle(CH-53D).
Static discharge precautions.
Load rigging.
Emergency cargo release.

Demonstrate:
Standardized terminology.
Cargo hook setup.
Hand and arm signals.

Performance Standards. Perform single point external hookups and releases with proficiency IAW applicable NATOPS. Execute

5 pickups and deliveries within 5 meters of intended point of delivery.

Prerequisite. CAL-220.

Range Requirements. Approved CAL/MAL site.

External syllabus support. HST, certified single point load.

EXT-241 1.5 R,SC 1 CH-53

Goal. Practice dual point external operations (53E). Practice single point external operations (53D).

Requirement

Review:
- EXT-172 (53E).
- EXT-240.

Discuss:
- Proper preflight of dual point system.
- Types of slings.
- Crew Coordination.
- External procedures.
- HST considerations.
- Standardized terminology.
- Dual point cargo hook system.
- Cargo hook control panel.
- Aircrew portable pendant control.
- Cargo hook emergency release handle.
- Static discharge precautions.
- Load rigging.
- Emergency cargo release.

Performance Standards. Perform dual point hookups and releases with proficiency IAW the applicable NATOPS. For CH-53D review performance standards for the EXT-240. Execute 5 pickups and deliveries within 5 meters of intended point of delivery.

Prerequisite. CAL-220.

Range Requirements. Approved CAL/MAL site.

External syllabus support. HST, certified dual point load.

EXT-242 1.5 R,SC 1 CH-53

Goal. Introduce and practice external operations in the TERF environment.

Requirement

Instructor:
CCTERFI required for initial qualification and re-qualification.

Review:
TERF-230.
EXT-240 and 241 as appropriate.

Discuss:
Emergency procedures.
Aircrew responsibilities during TERF flight.
Cargo pendant release procedures.
Varying hookup options.
Load length considerations for TERF flight.
Safety considerations.

Introduce:
Practice single or dual point external cargo carrying operations in a TERF environment.

Performance Standards. Perform external operations in the TERF environment IAW applicable NATOPS and ANTTP 3-22.3-53. Maintain situational awareness with regards to load clearance while conducting TERF maneuvers. Minimum of 1 pickup and delivery required.

Prerequisite. CAL-220, TERF-230, EXT-240, and EXT-241.

Range Requirements. Approved CAL/MAL site. Approved TERF maneuver area/route.

External Syllabus Support. HST, certified load.

EXT-243 1.5 R,SC 1 CH-53 NS

Goal. Practice single point external operations utilizing NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
HLL NS considerations.
Safety precautions.
External cargo lighting patterns.

Use of Chem lights on external pendant and the external load.
Blowing debris.
Load rigging.
Obstacle clearance on approach to and departure from the drop zone.

Discuss:
CRM.
Flight with single point external loads.
Load stability.
Standardized terminology.
HLL NS considerations.
Load rigging.

Performance Standards. Demonstrate proficiency of single point external operations using NS in a HLL condition as

outlined in the applicable NATOPS. Execute 5 pickups and deliveries within 5 meters of intended point of delivery.

Prerequisite. CAL-222 and EXT-240.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, certified single point load.

EXT-244 1.5 R,SC 1 CH-53 NS

Goal. Practice dual point external operations utilizing NS (53E). Practice single point external operations utilizing NS (53D).
Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- Safety precautions.
- External cargo lighting patterns.
- Use of Chem lights on external pendant and the external load.
- Blowing debris, rotor wash.
- Load rigging.
- Obstacle clearance on approach to and departure from the drop zone.

Discuss:
- HLL NS considerations.
- CRM.
- Flight with dual point external loads.
- Load stability.
- Standardized terminology.
- Load rigging.

Performance Standards. Demonstrate proficiency of dual point external operations using NS in a HLL condition IAW applicable NATOPS. Execute 5 pickups and deliveries within 5 meters of intended point of delivery.

Prerequisite. CAL-222 and EXT-241.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, certified dual point load.

5. Field Carrier Landing Practice (FCLP)

a. Purpose. To develop procedures and CRM required for shipboard operations.

b. General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the appropriate CH-53 NATOPS Flight Manual, NWP-42, the LHA/LPH/LHD NATOPS, and OPNAVINST 3710.7. Each event requires 5 FCLPs. A CCNSI is required for initial FCLP-273.

c. Crew Requirement. CC, CC/CCUI or CC/AOUI. FCLP-273 requires 2 qualified aircrew if not an instructional flight.

d. Flight Training. (3 Flights, 3.0 Hours).

FCLP-271 1.0 R 1 CH-53

Goal. Introduce day FCLPs.

Requirement

Discuss:
Shipboard operations.
Aircraft clearance.
CRM.
Hand and arm signals.
Safety procedures.
Ditching procedures.
Emergency procedures.

Introduce:
Procedures required for shipboard operations.

Performance Standards. Perform day FCLPs IAW appropriate shipboard NATOPS.

Prerequisite. CAL-220.

Range Requirements. Suitable FCLP pad.

External Syllabus Support. FCLP pad.

FCLP-272 1.0 1 CH-53 N*

Goal. Introduce night, unaided FCLPs.

Requirement

Discuss:
Nighttime procedures.
Shipboard lighting.
Shipboard operations.
Aircraft clearance.
CRM.
Hand and arm signals.
Safety procedures.
Ditching procedures at night.
Emergency procedures.

Introduce:
Procedures required for shipboard operations at night.

Performance Standards. Perform night unaided FCLPs IAW appropriate shipboard NATOPS.

Prerequisite. FCLP-271.

Range Requirements. Suitable FCLP pad.

External Syllabus Support. FCLP pad.

FCLP-273 1.0 R 1 CH-53 NS

Goal. Introduce NS FCLPs.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Discuss:
NS considerations for appropriate light level.
Shipboard operations.
Shipboard lighting.
Aircraft clearance.
CRM.
Hand and arm signals.
Safety procedures.
Ditching procedures.
Emergency procedures.

Introduce:
Procedures required for shipboard operations in the NS environment.

Performance Standards. Perform NS FCLPs IAW appropriate shipboard NATOPS.

Prerequisite. CAL-222 and 320 as appropriate for ambient light level, and FCLP-271.

Range Requirements. Suitable FCLP pad.

External Syllabus Support. FCLP pad.

6. Air-to-Ground (AG)

a. Purpose. To develop procedures required to provide fire on targets of opportunity.

b. General

(1) Aerial gunnery qualification lectures and initial instructional flights must be conducted by a WTI or AGI.

(2) At least 1 aircrew shall possess a current copy of NAVAIR 01-230HM-75-17 Conventional Weapons Checklist.

(3) An AGI is required for initial flight or when aircrew are not designated aerial gunners.

(4) At the completion of this stage, aircrew will demonstrate knowledge of weapons systems and ordnance delivery with crew served weapons.

c. Crew Requirement. CC/AGI/AGUI.

d. Ground Training. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (2 Flights, 2.0 Hours).

AG-280 1.0 R 1 CH-53

Goal. Introduce aerial gunnery training with the .50 Cal Machine Gun.

Requirement

Instructor:
AGI required for initial qualification and re-qualification.

Discuss:
- Use and application of crew served weapons checklist.
- Fire discipline.
- Aiming techniques.
- Crew coordination.
- Fire control voice commands/hand and arm signals.
- Range considerations.
- Weapon capabilities.
- Firing in landing profile.
- Weapon malfunctions.
- Burst rates.

Introduce:
- Preflight.
- Safety procedures associated with ordnance evolutions.
- Ordnance loading.
- Burst Rates.
- Flight profiles (running, diving, hovering).
- Post-flight.

Performance Standards. Operate .50 Cal Machine Gun safely IAW crew served weapons checklist and ANTTP 3-22.3-53. Aircrew shall demonstrate positive weapons control and effective fire on pre-briefed targets as stated in the ANTTP 3-22.3-53.

Prerequisites. TERF-230.

Ordnance. 500 rds .50 Cal. per crew member and 2 .50 Cal Machine Guns.

Range Requirements. Live fire AG range (.50 Cal).

AG-281 1.0 R 2 CH-53

Goal. Introduce day AG with the .50 Cal Machine Gun within a section.

Requirement

Instructor:
AGI required for initial qualification and re-qualification.

Review:
- AG-280.

Discuss:
- Crew responsibilities.
- Section responsibilities.

Sectors of fire.
Target hand-off.

Introduce:
Limited sectors of fire.
Fire discipline within a section.
Weapons Conditions (Weapons Free, Tight, Hold).

Practice:
Firing on prebriefed targets.
Crew coordination.
Firing in different flight profiles, (i.e. diving, hovering, etc.).
Burst rates.

Performance Standards. Operate .50 Cal Machine Gun safely IAW crew served weapons checklist and ANTTP 3-22.3-53 within a section. Aircrew shall demonstrate positive weapons control in a section and effective fire on pre-briefed targets as stated in the ANTTP 3-22.3-53.

Prerequisites. TERF-231 and AG-280.

Ordnance. 500 rds .50 Cal. per crew member and 2 .50 Cal Machine Guns.

Range Requirements. Live fire AG range (.50 Cal).

7. Tactics (TAC)

a. Purpose. To introduce aircrew responsibilities for tactical missions.

b. General

(1) Completion of TAC-291 satisfies the requirement for NSQ HLL.

(2) A CCNSI is required on initial TAC-291.

(3) If rounds are utilized, an AGI is required for initial flights or when the aircrew are not designated aerial gunners.

c. Crew Requirement

(1) If rounds are utilized CC/AGI/AGUI.

(2) If rounds are not utilized CC/AO, CC/CCUI or CC/AOUI.

(3) If rounds are utilized, TAC-291 requires 2 HLL/AG qualified aircrew if not an instructional flight.

d. Ground Training. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training. Review ANTTP 3-22.3-53 applicable chapters.

e. Flight Training. (2 Flights, 4.0 Hours).

TAC-290 2.0 2 CH-53

Goal. Introduce aircrew responsibilities during a section tactical operation.

Requirement

Review:
- INT-200 and INT 201.
- FORM-210.
- CAL-221.
- TERF-231.

Discuss:
- Weather considerations.
- Scanning techniques (open terrain, dense vegetation).
- Navigation.
- No comm lead changes.
- Procedures for downed aircrew escorts.

Introduce:
- Lookout Doctrine.
- Scanning techniques.
- Egress considerations with .50 Cal Machine Guns mounted.

Performance Standards. Demonstrate basic knowledge in low threat environment as stated in ANTTP 3-22.3-53. Demonstrate effective scan techniques as stated in ANTTP 3-22.3-53.

Prerequisite. CAL-221 and TERF-231.

Ordnance. Two .50 Cal Machine Guns and optional .50 Cal rounds.

External Syllabus Support. Ordnance request for weapons.

TAC-291 2.0 R 2 CH-53 NS

Goal. Introduce aircrew responsibilities during tactical operations with multiple aircraft using NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- TAC-290.

Discuss:
- Taxi drop of internal cargo.
- Paradrop operations.
- Embarking/debarking of troops using NS.
- Comfort level.

Introduce:
- Lookout doctrine.
- Scanning techniques.
- Egress considerations with .50 Cal Machine Guns mounted.

Performance Standards. Demonstrate basic knowledge in low threat environment on NS as stated in ANTTP 3-22.3-53. Demonstrate effective scan techniques on NS as stated in ANTTP 3-22.3-53.

Prerequisite. CAL-223, TERF-233, and TAC-290.

Ordnance. Two .50 Cal Machine Guns and optional .50 Cal rounds.

External Syllabus Support. Ordnance request for weapons.

233. CORE SKILL ADVANCED PHASE. Aircrew undergoing instruction in this phase must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training prior to conducting NS events. NS rules of conduct will be per T&R Program Manual. Aircrew shall fly all NS events listed below under ambient light conditions of below .0022 LUX. An aircrew under instruction is NSQ LLL (able to transport troops) when the following 5 events have been completed: CAL-320, CAL-321, TERF-330, TERF-331, and TAC-391. CAL-320, CAL-321, TERF-330, TERF-331, EXT-342 and TAC-391 must be flown under LLL conditions. These flights require a CCNSI for initial qualification. Aircrew may fly all other NS events in this phase under HLL or LLL conditions.

1. Confined Area Landings (CAL)

a. Purpose. To conduct CALs in LLL conditions (below .0022 LUX).

b. General. A CCNSI is required on initial flights.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. CAL-320 and CAL-321 require 2 LLL qualified aircrew if not an instructional flight.

d. Prerequisite. Crew member under instruction must be NSQ HLL with EXT-244 complete.

e. Flight Training. (2 Flights, 3.0 Hours).

CAL-320 1.5 1 CH-53 NS

Goal. Perform NS low work and CALs during LLL conditions.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- CALs.
- CRM.
- Lookout doctrine.
- Aircraft clearances.
- Terrain suitability.
- Drift correction.
- Dark adaptation.
- NS failures.
- Aircraft lighting.

Discuss:
- LLL NS considerations.

Comfort levels.
CRM.

Performance Standards. Practice aircrew responsibilities during CALs using NS in a LLL condition IAW applicable NATOPS.

Prerequisite. NSQ HLL and EXT-244.

Range Requirements. CAL/MAL site.

CAL-321 1.5 R,SC 2 CH-53 NS

Goal. Develop proficiency in section CAL operations using NS during LLL conditions.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
CALs.
CRM.
Lookout doctrine.
Aircraft clearances.
Terrain suitability.
Drift correction.
Dark adaptation.
NS Failures.
Aircraft lighting.

Discuss:
LLL NS considerations.
Comfort levels.
CRM.

Performance Standards. Demonstrate proficiency of aircrew responsibilities during CALs using NS in a LLL condition IAW the applicable NATOPS.

Prerequisite. CAL-320.

Range Requirements. CAL/MAL site.

2. Terrain Flight (TERF)

a. Purpose. To develop TERF crew coordination skills in the night environment. Develop proficiency in TERF using NS in LLL conditions.

b. General

(1) Currency requirements per T&R Program Manual.

(2) A CCNSI is required on initial flights.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. TERF-330 and TERF-331 require 2 LLL qualified aircrew if not an instructional flight.

d. Ground Training. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (2 Flights, 3.0 Hours).

TERF-330 1.5 1 CH-53 NS

Goal. Review maneuvers and clearance while flying in a TERF environment using NS in LLL conditions.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- TERF-232.
- CAL-320.

Discuss:
- LLL NS considerations.
- Aircraft lighting.
- Crew comfort levels.
- CRM.
- Lookout doctrine.
- Terminology.
- ICS procedures.
- Obstacle clearance.
- Emergency procedures.

Performance Standards. Perform TERF maneuvers while in the TERF environment using NS in a LLL condition IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. CAL-320.

Range Requirements. Approved TERF maneuver area/route.

TERF-331 1.5 R,SC 2 CH-53 NS

Goal. Review maneuvers and clearance for an aircraft section in the TERF environment using NS in LLL conditions.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
- CAL-321.
- TERF-330.

Discuss:
- LLL NS considerations.
- Aircraft lighting.
- Crew comfort levels.
- CRM.
- Lookout doctrine.
- Terminology.

ICS procedures.
Aircraft clearance.
Emergency procedures.
Multiple aircraft operations.

Performance Standards. Perform TERF maneuvers for a section while in the TERF environment using NS in a LLL condition IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. CAL-321 and TERF-330.

Range Requirements. Approved TERF maneuver area/route.

3. External Loads (EXT)

a. Purpose. To develop proficiency with heavy lift external loads from confined areas in the TERF environment.

b. General

(1) Aircrew may fly these flights in conjunction with the pilot syllabus. When practical, flights should practice externals with heavy lift FMF equipment.

(2) EXT-342 and 343 require a CCNSI for initial qualification. EXT-342 must be flown under LLL conditions.

(3) Transport loads either single or dual point, as appropriate.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. EXT-342 and EXT-343 require 2 NSQ aircrew if not an instructional flight.

d. Ground Training. Consult FMFRP 5-31 VOL. I-III (Basic Operation/ Equipment and Single Dual Point Hook Procedures), FMFRP 5-31, Vol. 1, Multi-Service Helicopter External Air Transport Manual and applicable series NATOPS.

e. External Syllabus Support. HST, certified load.

f. Flight Training. (2 Flights, 3.0 Hours).

EXT-342 1.5 R,SC 1 CH-53 NS

Goal. Introduce external operations in LLL conditions, dual point preferred for CH-53E.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
CAL-320.
EXT-243 and 244 as appropriate.
Safety precautions.
External cargo lighting patterns.
Use of Chem lights on external pendant and the external load.
Blowing debris.

Load rigging.
Obstacle clearance on approach to and departure from the drop zone.

Discuss:
LLL NS considerations.
CRM.
Flight with dual point external loads (if required).
Load stability.
Standardized terminology.
Load rigging.

Introduce:
External operations using NS in LLL conditions.

Performance Standards. Demonstrate proficiency of external operations using NS in a LLL condition IAW applicable NATOPS.

Prerequisite. CAL-320.

Range Requirement. Approved CAL/MAL site.

External Syllabus Support. HST, certified load.

EXT-343 1.5 R,SC 1 CH-53 NS

Goal. Introduce external operations in the TERF profiles using NS in any ambient light level condition.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
EXT-242.
CAL-320.
TERF-330.
Safety precautions.
External cargo lighting patterns.
Use of Chem lights on external pendant and the external load.
Blowing debris.
Load rigging.
Obstacle clearance on approach to and departure from the drop zone.

Discuss:
HLL or LLL NS considerations as applicable.
CRM.
Flight with dual point external loads (if required).
Load stability.
Standardized terminology.
Load rigging.
Aircraft clearances.
Load clearances.

Introduce:
External operations using NS in the TERF environment.
External operations while operating in the TERF environment.

Performance Standards. Demonstrate proficiency of external operations using NS while operating in the TERF environment as outlined in the applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. EXT-242 (EXT-244 if HLL or EXT-342 if LLL).

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, certified load.

4. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using ASE and tactics to defeat non-radar ground-based threats.

b. General

(1) Aircrew shall conduct this stage against non-radar ground-based threats. Utilization of a range with threat simulation systems (e.g., Smokey SAMs, target lights, handheld pyrotechnics, and AAR-47 stimulator) will greatly enhance aircrew training.

(2) WTI or DMI required for initial qualification and re-qualification. NSI required for initial qualification and re-qualification if utilizing NS.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. If utilizing NS, GTR-350 requires 2 qualified aircrew in the appropriate light level if not an instructional flight.

d. Ground Training

(1) Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

(2) Review applicable chapters of ANTTP 3-22.3-CH53 for non-radar IR and AAA countermeasures, ASE, and tactical formation maneuvering. Consult the AFTTP 3-1 for threat systems information.

e. Flight Training. (1 Flight, 1.0 Hour).

GTR-350 1.0 R 2 CH-53 (NS)

Goal. Conduct ground threat reactions and ASE familiarization.

Requirement

Instructor:
CCWTI or CCDMI required for initial qualification and re-qualification. CCNSI required if utilizing NS when both aircrew are not NSQ for the appropriate light level.

Discuss:
Operation of applicable ASE gear.
The strengths and weaknesses of each ASE system versus non-radar ground-based threats.
CRM.
Different tactical IR countermeasures.
Tactical maneuvering to counter the threat.
Inter- and intra-aircraft communications and standard terminology.
Threat identification and rules of engagement.
Lookout doctrine.
Low altitude emergencies.

Introduce:
Tactical maneuvering and ASE employment to counter the threat.

Review:
TACFORM maneuvering.
TERF.

Performance Standards. Demonstrate basic knowledge of attack warning against various non-radar ground-based threats. Utilize standard terminology in inter-aircraft communications. Demonstrate working knowledge of ASE.

Prerequisite. TERF-231. If flown under HLL conditions, TERF-233. If flown under LLL conditions, TERF-331.

Ordnance. 60 flares and 2 .50 Cal Machine Guns.

Range Requirements. Expendable capable range. Approved TERF maneuver area/route.

External Syllabus Support. Ground-based non-radar threat simulators (e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, target lights).

5. Air-to-Ground Gunnery and Qualification (AG)

a. Purpose. To demonstrate proficiency in delivering fire on targets of opportunity at night while using NS.

b. General

(1) Completion of this stage is the minimum requirement for aerial gunnery training. AGUI must complete the aerial gunnery evaluation event, AG-381 and be designated by the commanding officer prior to firing without an AGI.

(2) AG-381 certifies the AGUI as an aerial gunner with the respective weapon. Aircrew may be designated an aerial gunner by the commanding officer after completing AG-381.

(3) Aircrew may conduct these events in either HLL or LLL conditions and should be NSQ in the appropriate light level condition. If aircrew are not NSQ for appropriate light level a CCNSI is required.

(4) Aerial gunnery lectures and initial instructional flights must be conducted by a WTI or AGI.

(5) An AGI CCNSI is required for initial flights.

(6) At least 1 aircrew shall possess a current copy of NAVAIR 01-230HM-75-17 Conventional Weapons Checklist.

c. Crew Requirement. CC/AO or CC/AGI/AGUI. AG-380 and AG-381 require 2 NSQ aircrew if not an instructional flight.

d. Ground Training. Review appropriate chapters of the ANTTP 3-22.3-53. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (2 Flights, 2.0 Hours).

AG-380 1.0 R 1 CH-53 NS

Goal. Introduce aerial gunnery training with the .50 Cal Machine Gun while using NS.

Requirement

Instructor:
CCNSI CCAGI required for initial qualification and re-qualification.

Review:
AG-280.

Discuss:
Muzzle Flash.
Sighting techniques.
LASER safety/employment.
Cabin configuration.
Burst rates.

Introduce:
Aiming techniques on NS.
Weapons control on NS.
Lighting used with weapon operation.

Performance Standards. Operate .50 Machine Gun safely IAW crew served weapons checklist and ANTTP 3-22.3-53 while utilizing NS. Aircrew shall demonstrate positive weapons control during night environment and demonstrate effective fire on pre-briefed targets as stated in the ANTTP 3-22.3-53.

Prerequisite. AG-280 (TERF-232 or TERF-330).

Ordnance. 500 rds .50 Cal per crew member and 2 .50 Cal Machine Guns.

Range Requirements. Live fire AG range (.50 Cal). Laser approved range.

AG-381 1.0 R 2 CH-53 NS

Goal. Introduce aerial gunnery training with the .50 Cal Machine Gun while using NS within a section.

Requirement

Instructor:
CCNSI CCAGI required for initial qualification and re-qualification.

Review:
AG-380.

Discuss:
Crew responsibilities.
Section responsibilities.
Sectors of fire.
Target hand-off.
Weapons Conditions (Weapons Free, Tight, Hold).

Introduce:
Aiming techniques in section on NS.
Weapons control in section on NS.

Practice:
Aiming techniques on NS.
Weapons control on NS.
Lighting used with weapon operation.
Weapons employment/delivery.

Performance Standards. Aircrew will demonstrate proficiency implementing all aspects of the crew served weapons checklist. Aircrew will demonstrate effective and safe usage of the .50 Cal Machine Gun IAW the ANTTP 3-22.3-53.

Prerequisite. AG-380 (TERF-233 or TERF-331).

Ordnance. 500 rds .50 Cal. per crew member and 2 .50 Cal Machine Guns.

Range Requirements. Live fire AG range (.50 Cal). Laser approved range.

6. Tactics (TAC)

a. Purpose. To develop aircrew responsibilities during tactical operations in a low to medium threat environment.

b. General

(1) All mission briefs require an intelligence brief. To the greatest extent possible incorporate the employment of escort aircraft (fixed or rotary wing), the employment of the ALE and the APR-39, the .50 Cal

Machine Gun, and use of a NAVAIR approved gas masks. Aircrew shall conduct these flights under the standards required in MCO 3501.4, MCCRES, Volume III, Marine Heavy Helicopter Squadrons and/or MCO 3501.8 MCCRES, Volume IX, Special Operations.

(2) A CCNSI is required for initial TAC-391. TAC-391 must be flown under LLL conditions.

(3) NBC-460 required if a NAVAIR approved gas mask is used.

c. Crew Requirements. CC/AG, CCAGI/CCUI. TAC-391 requires 2 LLL qualified aircrew if not an instructional flight.

d. Ground Training Requirements. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (2 Flights, 4.0 Hours).

TAC-390 2.0 R, 2+ CH-53

Goal. Introduce and practice aircrew responsibilities during tactical operations with multiple aircraft.

Requirement

Review:
Loading/securing/unloading of cargo/vehicles/troops.

Discuss:
Taxi drop of internal cargo.
Paradrop operations.
Embarking/debarking of troops.
External Operations.

Practice:
Responsibilities during a tactical operation.

Performance Standard. Demonstrate proficiency in low to medium threat environment as stated in ANTTP 3-22.3-53.

Prerequisites. TAC-290. All aircrew should be aerial gunner qualified. An AGI is required if aircrew are not aerial gunners.

Ordnance. 1000 rounds of .50 Cal, 30 chaff, 30 flares and 2 .50 Cal Machine Guns.

External Syllabus Support. Range/Ordnance/Escort request if utilized.

TAC-391 2.0 R 2+ CH-53 NS

Goal. Practice aircrew responsibilities during tactical operations at night with multiple aircraft in LLL conditions utilizing NS.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
TAC-291.

Discuss:
Taxi drop of internal cargo.
Paradrop operations.
Differences between day and night operations.
Embarking and debarking of troops at night.
External operations.
Crew comfort.
Crew coordination.

Practice:
Aircrew responsibilities during a tactical operation at night in LLL conditions on NS.

Performance Standard. Demonstrate proficiency in low to medium threat environment in LLL conditions on NS as stated in ANTTP 3-22.3-53.

Prerequisite. TERF-331 and TAC-390. All aircrew should be aerial gunners. An AGI CCNSI is required if aircrew are not aerial gunner qualified.

Ordnance. 1000 rounds of .50 Cal, 30 chaff, 30 flares and 2 .50 Cal Machine Guns.

Range Requirements. Live fire AG range (.50 Cal). Laser approved range.

External Syllabus Support. Escort request if utilized.

234. CORE SKILL PLUS PHASE

1. Helicopter Insertion/Extraction Techniques (HIE)

a. Purpose. To develop proficiency with insertion/extraction methods required in executing special missions by emphasizing rappelling, fast-rope, Special Insertion/Extraction (SPIE), helo casting, and aerial delivery.

b. General. The CC shall conduct a brief with the specific team leader, then the entire team prior to take off to discuss mission requirements and aircraft safety procedures. An NSI is required for NS initial flights.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

d. Ground Training Requirements

(1) Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

(2) Aircrew shall be NSQ for appropriate light level conditions and qualified to carry troops per T&R Program Manual in order to conduct HIE-400.

e. Flight Training. (3 Flights, 3.0 Hours).

HIE-400 1.0 R,SC 1 CH-53 (NS)

Goal. Introduce procedures for tactical insertion and/or extraction of a ground force via rappelling, fast-rope or SPIE.

Requirement

Instructor:
CCNSI required for NS initial qualification and re-qualification.

Discuss:
- NS considerations if applicable.
- CRM.
- Safety procedures.
- Hand and arm signals.
- Obstacle clearance.
- Associated equipment.
- Emergency procedures.

Introduce:
- Tactical insertions.
- Techniques for inserting personnel by fast-rope.
- Rappelling.
- SPIE rig.

Performance Standards. Perform tactical insertion and/or extraction of a ground force via rappelling, fast-rope or SPIE IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. CAL-220 (TAC-291 or TAC-391).

External Syllabus Support. Fast rope bar.

HIE-401 1.0 R,SC 1 CH-53

Goal. Introduce procedures for tactical insertion helocast.

Requirement

Instructor:
CCNSI required for NS initial qualification and re-qualification.

Discuss:
- CRM.
- Safety procedures.
- Hand and arm signals.
- Obstacle clearance.
- Associated equipment.
- Emergency procedures.

Introduce:
- Techniques for inserting personnel by helocast.

Performance Standards. Demonstrate procedures for a tactical insertion via helocast IAW applicable ANTTP 3-22.3-53.

Prerequisite. TERF qualified.

HIE-402 1.0 R 1 CH-53 (NS)

Goal. Introduce procedures for tactical insertion via paraops.

Requirement

Instructor:
CCNSI required for NS initial qualification and re-qualification.

Discuss:
NS considerations if applicable.
CRM.
Safety procedures.
Hand and arm signals.
Ground signals.
Obstacle clearance.
Associated equipment.
Emergency procedures.

Introduce:
Techniques for inserting personnel by paraops.

Performance Standards. Perform procedures for tactical insertion via paraops IAW applicable ANTTP 3-22.3-53.

Prerequisite. CAL-220 (TAC-291 or TAC-391).

2. Internal Loads (INT) (CH-53E)

a. Purpose. To introduce aircrew duties in loading, securing, unloading, internal procedures and use of the Tactical Bulk Fuel Delivery System (TBFDS).

b. General

(1) Aircrew may fly these flights in conjunction with any stage of the pilot syllabus.

(2) Instructor shall be a CCNSI if NS are used on initial flight.

c. Crew Requirement. CC/AO, CC/CCUI, CC/AOUI. If NS are utilized, INT-410 requires 2 qualified aircrew in the appropriate light level condition if not an instructional flight.

d. Ground/Academic Training. Study the A1-H53BE-GLG-000 (Cargo Loading Manual), NATOPS Flight Manual, and helicopter loading and equipment storage. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (1 Flight, 1.5 Hours).

INT-410 1.5 R SC 1 CH-53E (NS)

Goal. Review internal procedures and introduce use of the TBFDS.

Requirement

Instructor:
CCNSI required if NS are utilized for initial qualification and re-qualification.

Review:
INT-200 and INT-201.

Discuss:
Installation considerations for TBFDS.
Procedures for refueling other types of aircraft and/or vehicles.
Rapid Ground Refueling/FARP procedures to include preflight, taxiing aircraft, mechanical configuration, lighting configurations, post flight and clean up.
Fire fighting equipment and procedures for particular TBFDS evolution.

Introduce:
Proper restraint system and loading scenarios for different tank setups and fuel line configuration.

Performance Standards. Demonstrate knowledge of TBFDS setup and refueling operations as outlined in the ANTTP 3-22.3-53.

Prerequisite. INT-200 and CAL-220 (TAC-291 or TAC-391).

External Syllabus Support. Ground or RW assets to refuel.

3. Ground Threat Reaction (GTR)

a. Purpose. To introduce aircrew responsibilities during EW tactics in a medium threat environment. Upon completion of this stage aircrew should have an understanding of the maneuvers and employment techniques necessary to counter a low altitude surface-to-air radar threats.

b. General

(1) The use of an APR-39 trainer or WST simulator will aid in preparing aircrew prior to flight.

(2) WTI or DMI required for initial qualification and re-qualification. NSI required for initial qualification and re-qualification if utilizing NS.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. If NS are utilized, GTR-450 requires 2 qualified aircrew in the appropriate light level condition if not an instructional flight.

d. Ground/Academic Training. Aircrew under instruction will be familiar with procedures outlined in the helicopter DM Guide and should have completed academic instruction on the use of ASE gear. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (1 Flight, 1.0 Hour).

GTR-450 1.0 R 2 CH-53 (NS)

Goal. Introduce and practice aircrew responsibilities. Practice basic operations and procedures for ASE gear.

Requirement

Instructor:
CCWTI or CCDMI required for initial qualification and re-qualification. CCNSI required if utilizing NS when both aircrew are not NSQ for the appropriate light level.

Discuss:
- ASE gear.
- CRM.
- Section tactics.
- Low altitude emergencies.
- Use of RADAR horizons and RADAR masking techniques as they relate to specific air defense systems.

Introduce:
- RADAR guided threats on EW range if available.
- GTR while dispersing chaff and flares.

Performance Standards. Demonstrate basic knowledge of Attack Warning and helicopter tactics against a low altitude surface-to-air radar threats IAW the ANTTP 3-22.3-53.

Prerequisite. TERF-231.

Ordnance. 30 chaff, 30 flares and 2 .50 Cal Machine Guns.

Range Requirements. Expendable capable range. TERF maneuver area/route.

External Syllabus Support. Ground Emitter.

4. Defensive Measures (DM)

a. Purpose. To introduce aircrew responsibilities during section DM against helicopter and fixed-wing aggressor aircraft. Upon completion of this stage the aircrew should have an understanding of the maneuvers and employment techniques necessary to counter air-to-air threat.

b. General. A designated CCDMI is required on initial events.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. Aircrew should be familiar with procedures outlined in the helicopter DM Guide and should have completed academic instruction on the use of DECM equipment. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (2 Flights, 2.0 Hour).

DM-451 1.0 R 2 CH-53

Goal. Introduce and practice aircrew responsibilities as a section against an adversary helicopter.

Requirement

Instructor:
CCDMI required for initial qualification and re-qualification.

Discuss:
- Lookout doctrine.
- Attack Warning.
- Standard terminology.
- Section maneuvering.
- CRM.
- Aircraft limitations.

Introduce:
- Section helicopter DM against an adversary helicopter attacking from prebriefed and unknown locations.

Performance Standards. Demonstrate knowledge of Attack Warning and tactical maneuvers as stated in the MAWTS-1 DM Manual.

Prerequisite. TERF-231.

Ordnance. 30 flares and 2 .50 Cal Machine Guns.

Range Requirements. Expendable capable range. TERF maneuver area/route.

External Syllabus Support. Rotary wing aggressor.

DM-452 1.0 R 2 CH-53

Goal. Introduce and practice aircrew responsibilities in a section against a fixed wing adversary.

Requirement

Instructor:
CCDMI required for initial qualification and re-qualification.

Discuss:
- Fixed wing attack.
- Tactical maneuvers.

Practice:
- Section helicopter DM against a fixed wing adversary attacking from prebriefed and unknown locations.

Performance Standards. Demonstrate proficiency of Attack Warning and tactical maneuvers as stated in the MAWTS-1 DM Manual.

Prerequisite. TERF-231.

Ordnance. 30 flares and 2 .50 Cal Machine Guns.

Range Requirements. Expendable capable range. TERF maneuver area/route.

External Syllabus Support. Fixed wing aggressor.

5. Nuclear, Biological, and Chemical (NBC)

a. Purpose. To conduct flight operations while wearing NBC protective equipment.

b. General

(1) Aircrew may fly this event during the FAM, CAL, TAC, or NBC stage of the pilot syllabus. For the safe execution of initial NBC flights, 1 pilot and 1 aircrew shall remain unmasked.

(2) If NS are utilized, a CCNSI is required on initial flight.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI. If NS are utilized, NBC-460 requires 2 qualified aircrew in the appropriate light level condition if not an instructional flight.

d. Ground Training

(1) Discuss wearing of the NBC defense suit, mask, hood, gloves and boots. Introduce proper maintenance and serviceability checks on equipment, emphasizing donning of equipment.

(2) Discuss physiological factors associated with flying while wearing NBC protective equipment.

(3) Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (1 Flight, 1.0 Hour).

NBC-460 1.0 R 1 CH-53 (NS)

Goal. Introduce flight in a simulated NBC environment with a NAVAIR approved gas mask.

Requirement

Instructor:
CCNSI required for NS initial qualification and re-qualification.

Discuss:
- Chemical agents.
- Biological agents.
- Fatigue.
- Distortion of vision while using the gas mask.

Demonstrate:
- A portion of preflight wearing full NBC equipment.

Introduce:
- Donning of the Chemical suit and gas mask.
- Wearing of mask during taxi, low work takeoff and landings.

Performance Standards. Perform flight in a simulated NBC environment wearing NAVAIR approved gas masks IAW applicable NATOPS and ANTTP 3-22.3-53.

Prerequisite. CAL-220 (CAL-222 or CAL-320).

6. Carrier Qualification (CQ)

a. Purpose. To qualify aircrew in day and night shipboard operations.

b. General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the appropriate NATOPS Flight Manual, NWP-42, the LHA/LPH/LHD NATOPS, and OPNAVINST 3710.7. Each flight requires 5 CQs. CQ-473 requires CCNSI for initial flight.

c. Crew Requirement. CC, CC/CCUI or CC/AOUI. CQ-473 requires 2 qualified aircrew in the appropriate light level condition if not an instructional flight.

d. Flight Training. (3 Flights, 4.5 Hours).

CQ-470 1.5 R 1 CH-53

Goal. Introduce day CQs.

Requirement

Review:
FCLP-271.

Discuss:
Shipboard operations.
Aircraft clearance.
CRM.
Hand and arm signals.
Safety procedures.
Ditching procedures.
Emergency procedures.

Performance Standards. Perform day CQs IAW appropriate shipboard NATOPS.

Prerequisite. FCLP-271.

External Syllabus Support. Helicopter capable ship.

CQ-471 1.5 1 CH-53 N*

Goal. Introduce night, unaided CQs.

Requirement

Review:
FCLP-272.
CQ-470.

Discuss:
Night procedures.
Shipboard lighting.

Shipboard operations.
Aircraft clearance.
CRM.
Hand and arm signals.
Safety procedures.
Ditching procedures at night.
Emergency procedures.
Night fixation.

Performance Standards. Perform night unaided CQs IAW appropriate shipboard NATOPS.

Prerequisite. FCLP-272 and CQ-470.
External Syllabus Support. Lighted helicopter capable ship.

CQ-472 1.5 R 1 CH-53 NS

Goal. Introduce NS CQs.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
FCLP-273.
CQ-471.

Discuss:
NS considerations for appropriate light level.
Shipboard operations.
Shipboard lighting.
Aircraft clearance.
CRM.
Hand and arm signals.
Safety procedures.
Ditching procedures.
Emergency procedures.

Performance Standards. Perform NS CQs IAW appropriate shipboard NATOPS.

Prerequisite. FCLP-273 and CQ-470.

External Syllabus Support. NS compatible helicopter capable ship.

7. Moving Target Gunnery (MTG)

a. Purpose. To introduce techniques and profiles in conducting MTG.

b. General

(1) Aircrews shall fly this stage IAW ANTTP 3-22.3-53. An AGI is required for initial flights or when the aircrew are not designated aerial gunners.

(2) At least 1 aircrew shall possess a current copy of NAVAIR 01-230HM-75-17 Conventional Weapons Checklist.

(3) If NS are utilized, a CCNSI is required on initial flight.

c. Crew Requirements. CC/AGI/AGUI. If NS are utilized, MTG-480 requires 2 qualified aircrew in the appropriate light level condition if not an instructional flight.

d. Ground/Academic Training. Review applicable chapters of ANTTP 3-22.3-53. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (1 Flight, 1.5 Hours).

MTG-480 1.5 R 1 CH-53 (NS)

Goal. Introduce MTG. Moving land target preferred method. Requirement

Instructor:
AGI required for initial qualification and re-qualification or when aircrew are not designated aerial gunners. CCNSI required for NS initial qualification and re-qualification.

Review:
AG-281.

Discuss:
Aiming techniques.
Lead compensation.
Safety procedures.

Introduce:
Applicable MTG.
Shadow gunnery.
Towed banner.
Dart.
Moving land target.

Performance Standards. Demonstrate understanding of MTG as stated in the ANTTP 3-22.3-53.

Prerequisite. Aircrew should be aerial gunner qualified. An AGI is required if aircrew are not aerial gunners. An AGI CCNSI is required if initial code is flown at night. AG-280.

Ordnance. 500 rds .50 Cal. per crew member and 2 .50 Cal Machine Guns.

Range Requirements. Live fire AG range (.50 Cal). Laser approved range if flown at night.

External Syllabus Support. Moving target request if applicable.

8. Tail Gunnery (TG)

a. Purpose. To conduct aerial gunnery training using the Ramp Mounted Weapons System (RMWS) for the Tail Gunner (TG).

b. General

(1) Individuals successfully completing TG-481, TG-482 and TG-483 may be issued a TG Qualification letter from the commanding Officer.

(2) Unqualified individuals [Tail Gunners Under Instruction (TGUI)] shall be supervised by a TGI.

(3) Individuals shall be NSQ for the appropriate light level condition. AG Qualification is a prerequisite for TG-481.

(4) Laser aiming devices are required for TG-483.

(5) Tail gunnery introductory lectures and initial instructional flights shall be conducted by a TGI.

(6) Completion of the entire AG course cannot be waived or deferred.

(7) At least 1 aircrew shall possess a current copy of NAVAIR 01-230HM-75-17 Conventional Weapons Checklist.

c. Crew Requirements. CC/AGI/AGUI/TG or CC/AGI/AGUI/TGUI/TGI.

d. Ground/Academic Instruction. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (3 Flights, 3.0 Hours).

TG-481 1.0 R 1 CH-53

Goal. Introduce RMWS operational considerations, safety precautions, and crew coordination for conducting multi-crew served weapons operations.

Requirement

Instructor:
CCTGI required for initial qualification and re-qualification.

Review:
AG-280.

Discuss:
RMWS configuration.
Use and configuration of aircrew restraint system.
Crew Served Weapons Checklist.
Sectors of fire.
Aiming techniques.
Target hand-off.
Crew coordination.
Range considerations.
Weapon capabilities.
Firing in landing profile.
Weapon malfunctions.
Burst rates.

Introduce:
- Preflight.
- Safety procedures associated with ordnance evolutions.
- Interlocking fields of fire.
- Ordnance loading.
- Burst rates.
- Flight profiles (running, hovering, landing).
- Post flight.

Performance Standards. Operate .50 Cal RMWS safely IAW crew served weapons checklist and ANTTP 3-22.2-53. Aircrew shall demonstrate positive weapons control and effective fire on pre-briefed targets as stated in the ANTTP 3-22.2-53.

Prerequisites. Aerial gun qualified.

Ordnance. 1500 rounds .50 Cal and 3 .50 Cal Machine Guns. 500 rounds per weapon.

Range Requirements. Live fire AG range (.50 Cal).

TG-482 1.0 R 2 CH-53

Goal. Practice RMWS employment during a day section aerial gunnery flight.

Requirement

Instructor:
CCTGI required for initial qualification and re-qualification.

Review:
- TG-481.

Discuss:
- Crew coordination.
- Section responsibilities.
- Sectors of fire.
- Target hand-off.

Introduce/Practice:
- Aiming techniques in a section.
- Weapons control in a section.

Practice:
- Aiming techniques in a section.
- Weapons control in a section.
- Weapons employment/delivery from the rear hemisphere in a section.

Performance Standards. Operate .50 Cal RMWS safely IAW crew served weapons checklist and ANTTP 3-22.2-53. Aircrew shall demonstrate positive weapons control in a section and effective fire on pre-briefed targets as stated in the ANTTP 3-22.2-53.

Prerequisites. TG-481.

Ordnance. 1500 rounds .50 Cal and 3 .50 Cal Machine Guns. 500 rounds per weapon. Chaff and flare mix (overt and covert).

Range Requirements. Live fire AG range (.50 Cal).

TG-483 1.0 R 2 CH-53 NS

Goal. Introduce NS RMWS operational considerations, safety precautions, and crew coordination for conducting multi-crew served weapons operations during a section night aerial gunnery flight. Qualify aircrew as a Tail Gunner Observer.

Requirement

Instructor:
CCTGI required for initial qualification and re-qualification.

Review:
- TG-481.
- TG-482.

Discuss:
- Crew coordination while utilizing NS.
- Section responsibilities while utilizing NS.
- Sectors of fire while utilizing NS.
- Target hand-off while utilizing NS.
- Effects of chaff and flares on target.
- Acquisition/engagement while utilizing NS.
- Laser safety/employment.

Introduce:
- Aiming techniques in a section while utilizing NS.
- Weapons control in a section while utilizing NS.
- Effects of chaff and flares on target.
- Acquisition/engagement while utilizing NS.

Practice:
- Aiming techniques in a section while utilizing NS.
- Weapons control in a section while utilizing NS.
- Interlocking fields of fire while utilizing NS.
- Weapons employment/delivery from the rear hemisphere in a section night shoot.

Performance Standards. Operate .50 Cal RMWS safely IAW crew served weapons checklist and ANTTP 3-22.2-53. Aircrew shall demonstrate positive weapons control in a section at night and effective fire on pre-briefed targets as stated in the ANTTP 3-22.2-53.

Prerequisites. TG-482.

Ordnance. 1500 rounds .50 Cal and 3 .50 Cal Machine Guns. 500 rounds per weapon. Chaff and flare mix (overt and covert).

Range Requirements. Live fire AG range (.50 Cal). Laser approved range.

9. Tactics (TAC)

a. Purpose. To conduct practical application exercises using skills developed through the syllabus. These exercises will include planning, briefing, and execution of an assault support mission in a low to medium threat environment.

b. General

(1) Aircrew shall conduct these flights under the standards required in MCO 3501.4A, MCCRES, Volume III, Marine Heavy Helicopter Squadrons and/or MCO 3501.8A MCCRES, Volume VII, MAGTF Elements. Aircrew may conduct these flights in high or low light level conditions and must be NSQ for appropriate light level.

(2) A CCNSI is required for initial TAC-492.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

d. Ground Training. Review all applicable manuals and consult the MAWTS-1 Course Catalog for the recommended lecture in the Enlisted Academic Support Package applicable to this stage of training.

e. Flight Training. (2 Flights, 4.0 Hours).

TAC-490 2.0 R 3+ ACFT (NS)

Goal. Develop integrated tactical flight proficiency in a low to medium threat environment.
Requirement

Instructor:
CCNSI required for NS initial qualification and re-qualification.
Review:
TAC-390 and TAC-391.

Discuss:
Escort integration, i.e. Battle Positions.
Sectors of fire consideration for entire flight.
Section responsibilities, i.e. free/engaged aircraft.
Operations in LZ.

Introduce:
Escort integration, i.e. Battle Positions.
Sectors of fire consideration for entire flight.
Section Responsibilities, i.e. free/engaged aircraft.
Operations in LZ.

Performance Standards. Demonstrate proficiency in multi-aircraft flight in a low to medium threat environment as stated in the ANTTP 3-22.3-53.

Prerequisite. TAC-390 if day. TAC-391 if NS are used. Aircrew should be aerial gunners. An AGI is required if aircrew are not aerial gunners.

Ordnance. 1000 rds of .50 Cal ammo, 30 chaff, and 2 .50 Cal Machine Guns.

External Syllabus Support. Range/ordnance/escort requests.

TAC-492 2.0 R 2 ACFT NS

Goal. Develop tactical flight proficiency in urban terrain operations at night.

Requirement

Instructor:
CCNSI required for initial qualification and re-qualification.

Review:
TAC-391.

Discuss:
Effects of ambient lighting on night systems in an urban area.
Obstacle clearance in urban area.
Scan techniques in urban area, i.e. dense vegetation scan.

Introduce:
Effects of ambient lighting on night systems in an urban area.
Obstacle clearance in urban area.
Scan techniques in urban area, i.e. dense vegetation scan.

Performance Standards. Demonstrate understanding of CH-53 operations in urban areas as stated in the MAWTS-1 MOUT Manual.

Prerequisite. TAC-291, TAC-391. Aircrew should be aerial gunner qualified. An AGI is required if aircrew are not aerial gunners.

Ordnance. 2 .50 Cal Machine Guns and notional .50 Cal rounds.
Syllabus Support. N/A.

240. INSTRUCTOR TRAINING

1. Crew Chief Instructor Under Training (CCIUT)

2. Fleet Operating Squadrons. For criteria concerning all instructor certifications and designations refer to T&R Program Manual. MAWTS-1 Course Catalog contains the academic and syllabus requirements for all instructor certifications.

3. Fleet Replacement Squadron

a. Purpose. To develop proficiency in instructional procedures and techniques to support CC training.

b. General

(1) All instructor under training flights emphasize standardization of CC procedures and techniques. The CCIUT should be capable of

demonstrating all training objectives associated with Core Skill Introduction flight instruction.

(2) IUT events 500 through 507 shall be complete prior to being designated a CCI. Upon completion of STANX-507 and designation by the commanding officer, the CCI is capable of instructing all Core Skill Introduction phase events to include TERF events.

(3) STANX-507 can be flown in conjunction with any Core Skill Introduction phase event.

c. Crew Requirement. CCI/CCIUT.

d. Flight Training. (8 Flights, 8.0 Hours).

FORM-500 1.5 2 CH-53

Goal. Demonstrate CC responsibilities and instructional techniques during formation flight.

Requirement

Review:
Form-152.

Discuss:
Parade position.
Formations.
Closure rate.
Hand and arm signals.
In-flight emergency procedures.
Standard terminology.

Performance Standards. Demonstrate proper CCI responsibilities and instructional techniques during day formation flights IAW requirements outlined in this Chapter.

FORM-501 1.5 2 CH-53 NS

Goal. Demonstrate CC responsibilities and instructional techniques during night formation flight.

Requirement

Review:
Form-153.

Discuss:
Closure rate.
Aircraft lighting.
Light signals.
Lookout responsibilities.
Target fixation.
Standard terminology.
NS considerations.

Performance Standards. Demonstrate proper CCI responsibilities and instructional techniques during NS formation flights IAW requirements outlined in this Chapter.

CAL-502 1.5 1 CH-53

Goal. Demonstrate CC responsibilities and instructional techniques during CALs.

Requirement

Review:
CAL-161.
CAL-162.

Discuss:
CALs.
CRM.
Landing gear system failures.
Vibrations.
Engine failures in flight.

Performance Standards. Demonstrate proper CCI techniques and responsibilities for day CALs IAW requirements outlined in this Chapter.

Range Requirements. CAL/MAL site.

CAL-503 1.5 1 CH-53 NS

Goal. Demonstrate CCI responsibilities and instructional techniques during HLL NS CALs.

Requirement

Review:
FAM-122.
CAL-163.

Discuss:
NS.
NS considerations.
Lighting.
CALs.
CRM.
Landing gear system failures.
Vibrations.
Engine failures in flight.

Performance Standards. Demonstrate proper CCI techniques and responsibilities for HLL NS CALS IAW requirements outlined in this Chapter.

Range Requirements. CAL/MAL site.

TERF-504 1.5 1 CH-53

Goal. Demonstrate CCI responsibilities and instructional techniques during maneuvers and navigation while flying in the TERF environment.

Requirement

Review:
CAL-161 and CAL-162.
TERF-180.

Discuss:
TERF maneuvers.
Aircraft clearances.
Standard terminology.
CALs.
CRM.
Landing gear system failures.
Vibrations.
Engine failures in flight.

Performance Standards. Demonstrate proper CCI techniques and responsibilities during maneuvers and navigation while flying in the TERF environment IAW requirements outlined in this Chapter.

Range Requirements. TERF maneuver area/route.

EXT-505 1.5 1 CH-53

Goal. Demonstrate CCI responsibilities and instructional techniques used during single (53D) and dual point (53E) external operations.

Requirement

Review:
CAL-161 and 162.
EXT-170 and 172.

Discuss:
CC duties.
Standard terminology.
External operations.
CALs.
CRM.
Landing gear system failures.
Emergencies.

Performance Standards. Demonstrate proper CCI techniques and responsibilities used during external operations IAW requirements outlined in this Chapter.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST, certified load.

EXT-506 1.5 1 CH-53 NS

Goal. Demonstrate CCI responsibilities and instructional techniques used during HLL NS external operations.

Requirement

Review:
CAL-163.
EXT-171 and 173.

Discuss:
NS considerations.
Lighting.
CC duties.
Standard terminology.
External operations.
CALs.
CRM.
Landing gear system failures.
Emergencies.

Performance Standards. Demonstrate proper CCI techniques and responsibilities used during HLL NS external operations IAW requirements outlined in this Chapter.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, certified load.

STANX-507 1.5 1 CH-53 (NS)

Goal. CC standardization check.

Requirement

Review:
Applicable 100 series codes.

Discuss:
CCUI duties/responsibilities.
Standard terminology.
External operations.
CALs.
CRM.
Emergency procedures.
Instructional techniques.

Performance Standards. Demonstrate standard CCI procedures, techniques and responsibilities IAW requirements outlined in this Chapter.

Prerequisite. N/A.

Ordnance. N/A.

External Syllabus Support. As required.

4. CH-53D Core Skill Introduction Instructor (CSII) Training (MAG-24)

a. Purpose. To develop qualified instructor CCs for day events using a standardized flight training program.

b. General

(1) Fly IUT flights with a designated CSII.

(2) All IUTs shall complete every event of the IUT training syllabus.

(3) Individuals shall be TERFI and NSI/NSFI designated prior to CSII designation.

(4) The MAG-24 standardization evaluator shall certify all CSIIs prior to designation. The MAG-24 standardization evaluator shall conduct an annual standardization check for all MAG CSIIs.

c. Training Objectives. All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the CC will be designated a CSII and is qualified to instruct CH-53D Core Skill Introduction CH-53E to D Series Conversion and Refresher events.

d. Crew Requirement. HAC/H2P/IUT/CSII.

e. Flight Training. (3 Flights, 3 Hours).

TERF-508 1.0 1 CH-53

Goal. Demonstrate CCI responsibilities and instructional techniques during maneuvers and navigation while flying in the TERF environment.

Requirement

Review:
CAL-161 and CAL-162.
TERF-180.

Discuss:
TERF maneuvers.
Aircraft clearances.
Standard terminology.
CALs.
CRM.
Landing gear system failures.
Vibrations.
Engine failures in flight.

Performance Standards. Demonstrate proper CCI techniques and responsibilities during maneuvers and navigation while flying in the TERF environment IAW requirements outlined in this Chapter.

Range Requirements. Approved TERF maneuver area/route.

EXT-509 1.0 1 CH-53

Goal. Demonstrate CCI responsibilities and instructional techniques used during single point external operations.

Requirement

Review:
- CAL-161 and 162.
- EXT-170 and 172.

Discuss:
- CC duties.
- Standard terminology.
- External operations.
- CALs.
- CRM.
- Landing gear system failures.
- Emergencies.

Performance Standards. Demonstrate proper CCI techniques and responsibilities used during external operations IAW requirements outlined in this Chapter.

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, certified single point load.

STANX-510 1.0 E 1 CH-53 (N)

Goal. CC standardization check.

Requirement

Review:
- Applicable 100 series codes.

Discuss:
- CCUI duties/responsibilities.
- Standard terminology.
- External operations.
- CALs.
- CRM.
- Emergency procedures.
- Instructional techniques.

Performance Standards. Demonstrate standard CCI procedures, techniques and responsibilities IAW requirements outlined in this Chapter.

Prerequisite. TERF-508, EXT-509.

External Syllabus Support. As required.

AG-540-543 See MAWTS-1 Course Catalog.

TG-544-546 See MAWTS-1 Course Catalog.

NS-560-562 See MAWTS-1 Course Catalog.

TERF-570-571 See MAWTS-1 Course Catalog.

DM-580-582 See MAWTS-1 Course Catalog.

NS-590-592 See MAWTS-1 Course Catalog.

250. REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS

1. Purpose. To determine qualification for designation in specific flight skills and systems knowledge.

2. General

a. This is an annual flight requirement per OPNAVINST 3710.7 and the CH-53 NATOPS Manual.

b. The evaluating CC shall be a CC NATOPS Assistant Instructor, NATOPS Instructor, or Evaluator.

3. Crew Requirement. CC/CC or CC/AO.

4. Flight Training. (1 Flight, 1.5 Hours).

EVAL-600 1.5 E 1 CH-53 (NS)

Goal. Completion of the annual NATOPS evaluation.

Requirement

Discuss:
Crew Brief.

Demonstrate:
Aircraft systems knowledge.
Pre/post flight procedures.
In-flight procedures.
Emergency procedures.
CRM.

Performance Standards. Demonstrate proficiency and knowledge of all flight skills and systems of the CH-53 as a CC or AO as applicable.

Prerequisites. Annual NATOPS Open and Closed book examinations must be complete prior to flight.

Ordnance. N/A.

External Syllabus Support. As required.

251. GRADUATE LEVEL COURSES

1. There are 5 graduate level courses that certify CCIs for tactical portions of the T&R syllabus. These courses are as follows:

a. Crew Chief Weapons and Tactics Instructor (WTI Sec MOS 6177).

b. Crew Chief Terrain Flight Instructor (CCTERFI).

c. Crew Chief Night Systems Instructor (CCNSI).

d. Crew Chief Defensive Measures Instructor (CCDMI).

e. Crew Chief Aerial Gunner Instructor (CCAGI).

f. Crew Chief Tail Gunner Instructor (CCTGI).

2. The above courses and applicable training syllabi are listed in the current MAWTS-1 Course Catalog. There will be no refly requirement for these instructor flights. T&R syllabus proficiency in stages is considered sufficient to maintain proficiency as an instructor. WTIs are only certified at the Weapons and Tactics Instructor course provided at MAWTS-1.

3. There is 1 graduate level course to qualify CCIs for the Fleet Replacement Squadron. This program of instruction is contained in paragraph 240, Instructor Under Training.

260. ORDNANCE REQUIREMENTS. Annual ordnance requirements are developed on an individual crewmember basis per OPNAVNOTE 8010.

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
.50 Cal	0	1,000	2,000	2,500	5,500	2,900	3,500
Chaff(1)	0	0	90	30	120	0	90
Flares(1)	0	0	90	90	180	0	90
Note (1) Chaff and Flare requirements are determined by the pilot's syllabus, Chapter 1.							

* Annual Ordnance requirements maintain aircrew proficiency.

270. MOS SYLLABUS MATRIX. These tables display specific 100 – 600 level event information such as; flight/simulator hours, refly interval, prerequisites, CRP, chaining, etc. in a table format.

CH-53 CREW CHIEF														
100 SERIES CORE SKILL INTRODUCTION														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
FAM														
FAM	110	1.5		*	A	1	D				3.0		DAY FAM	110
FAM	111	1.5		*	A	1	D	110	SCD		3.0		DAY FAM	111
FAM	112	1.5		*	A	1	D	111			3.0		DAY FAM	112
FAM	113	1.5		*	A	1	D	112	R,SCE		3.0		DAY FAM	113
FAM	119	1.5		*	A	1	(NS)	113	SCD		3.0		NIGHT FAM	119
FAM	120	1.5		*	A	1	N*	113			3.0		NIGHT FAM	120
FAM	121	1.5		*	A	1	NS	113,NITE LAB			4.0		NS FAM	121
FAM	122	1.5		*	A	1	NS	121	R		4.0		NS FAM	122
											26.0			
INT														
INT	135	1.5		*	A	1	(N)	113			2.0		D/N INT	135
INT	136	1.5		*	A	1	(N)	113			2.0		D/N INT	136
											4.0			
FORM														
FORM	152	1.5		*	A	2	D	113			2.0		DAY FORM	152
FORM	153	1.5		*	A	2	NS	122,152			2.0		NS FORM	153
											4.0			
CAL														
CAL	161	1.5		*	A	1	D	113	SCD		2.0		DAY CAL	161
CAL	162	1.5		*	A	2	D	161	R,SCE,SCD		2.0		DAY SECTION CAL	N/A
CAL	163	1.5		*	A	1	NS	122,161			2.0		NS CAL	163
CAL	164	1.5		*	A	2	NS	163	R,SCE		2.0		NS SECTION CAL	N/A
											8.0			
EXT														
EXT	170	1.5		*	A	1	D	161	R,SCD,SCE		3.0		DAY SINGLE PT EXT	170
EXT	171	1.5		*	A	1	NS	122,170	R,SCD,SCE		3.0		NS SINGLE PT EXT	171
EXT	172	1.5		*	A	1	D	170	R,SCE		3.0		DAY DUAL PT EXT	172
EXT	173	1.5		*	A	1	NS	171,172	R,SCE		3.0		NS DUAL PT EXT	173
											12.0			
TERF														
TERF	180	1.5		*	A	1	D	113	R,SCD		2.0		DAY TERF	180
											2.O			
CSIX														
CSIX	191	1.5		*	A	1	(NS)	All prior applicable 100 level flights	R,SCE,SCD	E	4.0		EVAL	191
											4.0			
CRP TOTAL FOR PHASE											**60.0**			

CH-53 CREW CHIEF															
200 SERIES CORE SKILL BASIC															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP (E)	CRP (D)	CHAINING	EVENT DESC	OLD CODE
INT															
INT	200	1.0		365	A	1	(N)		R		0.5	0.5		INT CARGO	200
INT	201	1.0		365	A	1	(N)		R		0.5	0.5		INT TROOPS	201
											1.0	1.0			
FORM															
FORM	210	1.0		365	A	2	D		R		0.5	0.5		2 A/C DAY FORM	210
FORM	211	1.0		180	A	2	NS	210	R		0.5	0.5	210	2 A/C HLL FORM	211
											1.0	1.0			
CAL															
CAL	220	1.5		365	A	1	D				0.5	0.5		1 A/C DAY CAL	220
CAL	221	1.5		365	A	2	D	210,220	R,SC		0.5	0.5	210,220	2 A/C DAY CAL	221
CAL	222	1.5		180	A	1	NS	220			0.5	0.5	220	1 A/C HLL CAL	222
CAL	223	1.5		180	A	2	NS	211,221, 222	R,SC		0.5	0.5	210,211,220,221,222	2 A/C HLL CAL	223
											2.0	2.0			
TERF															
TERF	230	1.5		365	A	1	D				0.5	0.5		1 A/C DAY TERF	230
TERF	231	1.5		365	A	2	D	210,230	R,SC		0.5	0.5	210,230	2 A/C DAY TERF	231
TERF	232	1.5		180	A	1	NS	230			0.5	0.5	220,222,230	1 A/C HLL TERF	232
TERF	233	1.5		180	A	2	NS	211,231, 232	R,SC		1.0	1.0	210,211,220,221,222, 223,230,231,232	2 A/C HLL TERF	233
											2.5	2.5			
EXT															
EXT	240	1.5		365	A	1	D	220	R,SC		0.5	0.0	220	SINGLE PT EXT	240
EXT	241	1.5		365	A	1	D	220	R,SC		0.5	1.0	220,240	DUAL PT EXT	241
EXT	242	1.5		365	A	1	D	220,230, 240,241	R,SC		1.0	1.0	220,230,240	DAY TERF EXT	341
EXT	243	1.5		180	A	1	NS	222,240	R,SC		1.0	0.0	220,222,240	HLL SINGLE PT EXT	242
EXT	244	1.5		180	A	1	NS	222,241	R,SC		1.0	2.0	220,222,240,241,243	HLL DUAL PT EXT	243
											4.0	4.0			
FCLP															
FCLP	271	1.0		365	A	1	D	220	R		0.5	0.5		CQ	471
FCLP	272	1.0		*	A	1	N*	271			0.5	0.5	271	CQ	472
FCLP	273	1.0		365	A	1	NS	SEE EVENT	R		0.5	0.5	271	CQ	473
											1.5	1.5			

CH-53 CREW CHIEF															
200 SERIES CORE SKILL BASIC															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP (E)	CRP (D)	CHAINING	EVENT DESC	OLD CODE
AG															
AG	280	1.0		365	A	1	D	230	R		0.5	0.5		1 A/C AG	280
AG	281	1.0		365	A	2	D	231,280	R		0.5	0.5	280	2 A/C AG	281
											1.0	1.0			
TAC															
TAC	290	2.0		365	A	2	D	221,231			1.0	1.0	201,210,220,221	2 A/C DAY TAC	290
TAC	291	2.0		365	A	2	NS	223,233, 290	R		1.0	1.0	201,210,211,220,221,222, 223,290	2 A/C HLL TAC	291
											2.0	2.0			
CRP TOTAL FOR PHASE											**15.0**	**15.0**			

CH-53 CREW CHIEF														
300 SERIES CORE SKILL ADVANCED														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
CAL														
CAL	320	1.5		180	A	1	NS	SEE EVENT			1.5	220,222	1 A/C LLL CAL	320
CAL	321	1.5		180	A	2	NS	320	R,SC		2.0	210,211,220,221,222,223,320	2 A/C LLL CAL	321
											3.5			
TERF														
TERF	330	1.5		180	A	1	NS	320			2.0	220,222,230,232,320	1 A/C LLL TERF	330
TERF	331	1.5		180	A	2	NS	321, 330	R,SC		2.0	210,211,220,221,222,223,230, 231,232,233,320,321,330	2 A/C LLL TERF	331
											4.0			
EXT														
EXT	342	1.5		180	A	1	NS	320	R,SC		2.0	220,222,240,241,243,244,320	LLL SINGLE/DUAL PT EXT	342
EXT	343	1.5		180	A	1	NS	SEE EVENT	R,SC		2.0	220,222,230,232,240,242,243	NS TERF EXT	343
											4.0			
GTR														
GTR	350	1.0		365	A	2	(NS)	SEE EVENT	R		1.0	210,230,231	GTR	350
											1.0			
AG														
AG	380	1.0		365	A	1	NS	SEE EVENT	R		1.5	280	1 A/C NS AG	380
AG	381	1.0		365	A	2	NS	SEE EVENT	R		2.0	281,380	2 A/C NS AG	381
											3.5			
TAC														
TAC	390	2.0		365	A	2+	D	290	R		2.0	201,210,220,221,290	2 A/C DAY TAC	390
TAC	391	2.0		365	A	2+	NS	331,390	R		2.0	201,210,211,220,221,222, 223,290,291,320,321,390	2 A/C LLL TAC	391
											4.0			
CRP TOTAL FOR PHASE											**20.0**			

CH-53 CREW CHIEF															
400 SERIES CORE PLUS															
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP (E)	CRP (D)	CHAINING	EVENT DESC	OLD CODE
HIE															
HIE	400	1.0		*	A	1	(NS)	SEE EVENT	R,SC		0.25	0.25	201	FAST-ROPE OR SPIE	400
HIE	401	1.0		365	A	1	D	TERFQ	R,SC		0.25	0.25	201	HELOCAST	401
HIE	402	1.0		*	A	1	(NS)	SEE EVENT	R		0.25	0.25	201	PARAOPS	402
											0.75	0.75			
INT															
INT	410	1.5		365	A	1	(NS)	SEE EVENT	R,SC		0.25	0.0	200	TBFDS	410
											0.25	0.0			
GTR															
GTR	450	1.0		365	A	2	(NS)	231	R		0.25	0.25	210,230,231	GTR	350
											0.25	0.25			
DM															
DM	451	1.0		365	A	2	D	231	R		0.25	0.25	210,230,231	RWDM	450
DM	452	1.0		365	A	2	D	231	R		0.25	0.25	210,230,231	FWDM	451
											0.5	0.5			
NBC															
NBC	460	1.0		*	A	1	(NS)	SEE EVENT	R		0.25	0.25		NBC	460
											0.25	0.25			
CQ															
CQ	470	1.5		365	A	1	D	271	R		0.25	0.25	271	DAY CQ	474
CQ	471	1.5		*	A	1	N*	272,470			0.25	0.25	271,470	UNAIDED CQ	475
CQ	472	1.5		365	A	1	NS	SEE EVENT	R		0.25	0.25	271,273,470	NS CQ	476
											0.75	0.75			
MTG															
MTG	480	1.5		365	A	1	(NS)	280	R		0.5	0.5	280	MTG	480
											0.5	0.5			
TG															
TG	481	1.0		365	A	1	D	AGQ	R		0.25	0.25		TG	481
TG	482	1.0		365	A	2	D	481	R		0.5	0.5	481	TG	482
TG	483	1.0		365	A	2	NS	482	R		0.5	0.5	481,482	TG	483
											1.25	1.25			
TAC															
TAC	490	2.0		365	A	3+	(NS)	SEE EVENT	R		0.25	0.25	210,220,221,290,390	TAC	490
TAC	492	2.0		365	A	2	NS	SEE EVENT	R		0.25	0.5	210,211,220,221,222, 223,290,291,390	TAC	492
											0.5	0.75			
CRP TOTAL FOR PHASE											**5.0**	**5.0**			

CH-53 CREW CHIEF														
500 SERIES INSTRUCTOR														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
FRS CCI														
FORM	500	1.5		*	A	2	D				0.0		FORM	500
FORM	501	1.5		*	A	2	NS				0.0		FORM	501
CAL	502	1.5		*	A	1	D				0.0		CAL	502
CAL	503	1.5		*	A	1	NS				0.0		CAL	503
TERF	504	1.5		*	A	1	D				0.0		TERF	504
EXT	505	1.5		*	A	1	D				0.0		EXT	505
EXT	506	1.5		*	A	1	NS				0.0		EXT	506
STANX	507	1.5		*	A	1	(NS)			E	0.0		STANX	507
											0.0			
MAG-24 CSII														
TERF	508	1.0		*	A	1	D				0.0		TERF	504
EXT	509	1.0		*	A	1	D				0.0		EXT	506
STANX	510	1.0		*	A	1	(N)			E	0.0		STANX	507
											0.0			
CRP TOTAL FOR PHASE											**0.0**			

CH-53 CREW CHIEF														
600 SERIES REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
EVAL														
EVAL	600	1.5		365	A	1	(NS)		R,SC	E	0.0		NATOPS EVAL	600
											0.0			
CRP TOTAL FOR PHASE											**0.0**			

CH-53 AERIAL OBSERVER														
100 SERIES CORE SKILL INTRODUCTION														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INT	DEVICE	# OF A/C	CONDITIONS	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	OLD CODE
FAM														
FAM	110	1.5		*	A	1	D				3.0		DAY FAM	110
FAM	121	1.5		*	A	1	NS	110	R		4.0		NS FAM	122
											7.0			
FORM														
FORM	152	1.5		*	A	2	D	161			4.0		DAY FORM	152
FORM	153	1.5		*	A	2	NS	122, 152			5.0		NS FORM	153
											9.0			
CAL														
CAL	161	1.5		*	A	1	D	110			4.0		DAY CAL	162
CAL	162	1.5		*	A	2	D	161	R,SCE		4.0		DAY SECTION CAL	N/A
CAL	163	1.5		*	A	1	NS	122,161			4.0		NS CAL	163
CAL	164	1.5		*	A	2	NS	163	R,SCE		5.0		NS SECTION CAL	N/A
											17.0			
EXT														
EXT	170	1.5		*	A	1	D	161	R,SCE		5.0		DAY SINGLE PT EXT	170
EXT	171	1.5		*	A	1	NS	122,170	R,SCE		5.0		NS SINGLE PT EXT	171
EXT	172	1.5		*	A	1	D	170	R,SCE		5.0		DAY DUAL PT EXT	172
EXT	173	1.5		*	A	1	NS	171,172	R,SCE		5.0		NS DUAL PT EXT	173
											20.0			
TERF														
TERF	180	1.5		*	A	1	D	161	R		3.0		DAY TERF	180
											3.0			
CSIX														
CSIX	191	1.5		*	A	1	(NS)	All prior applicable 100 level flights	R,SCE	E	4.0		EVAL	191
											4.0			
CRP TOTAL FOR PHASE											**60.0**			